JAN 2012 / VOL 102 NO 1
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LANDSCAPE ARCHITECTURE MAGAZINE

THE MAGAZINE OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS

ANCIENT & NEW

Andrew Rogers's land works in Turkey

JAMES VAN SWEDEN

His life and his garden evolve

OAXACAN TREASURE

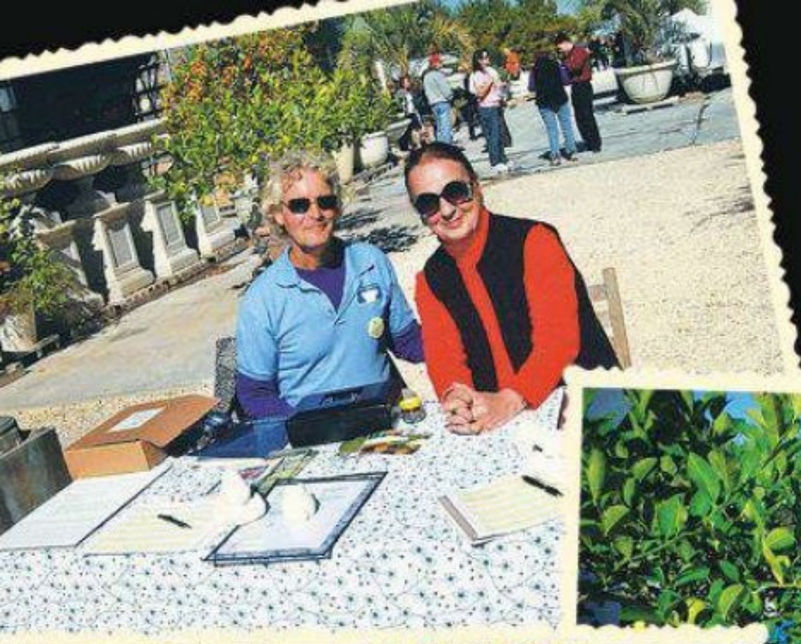
Mario Schjetnan navigates the jungle

TREES AT STAKE

James Urban on securing new specimens

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LONG



















THANKS SO MUCH FOR EVERYTHING!
Steve Outlaw

Thank You Beautiful Place
Thanks
Dee Koffi

Thanks, you have a wonderful place & do fantastic work Ted Hornby

Thanks for the tour and generous gift. Great place.
Kathy Schaffary
Mi.

Thank you Charlotte & Daniel. Your vision & Craft are truely inspirational! There is something about your place and continues that are simply soothing! Keep up the good work & I hope to visit again in the spring! Oh heck this winter
Stacy Range

Thank you, Jeffie & Emelie

Thank you for a great day; wonderful gardens, food and people!!!
Thank you
Edelvic

THANK YOU SO MUCH BEST FIELD TRIP EVER VAN
Thank you
Michelle

Thanks Had a Wonderful Time Hope to see you Next year
Eddie

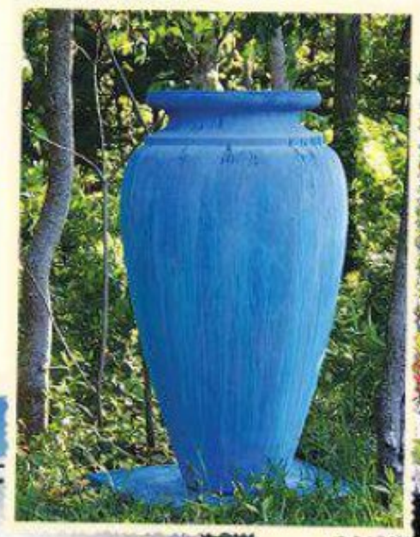
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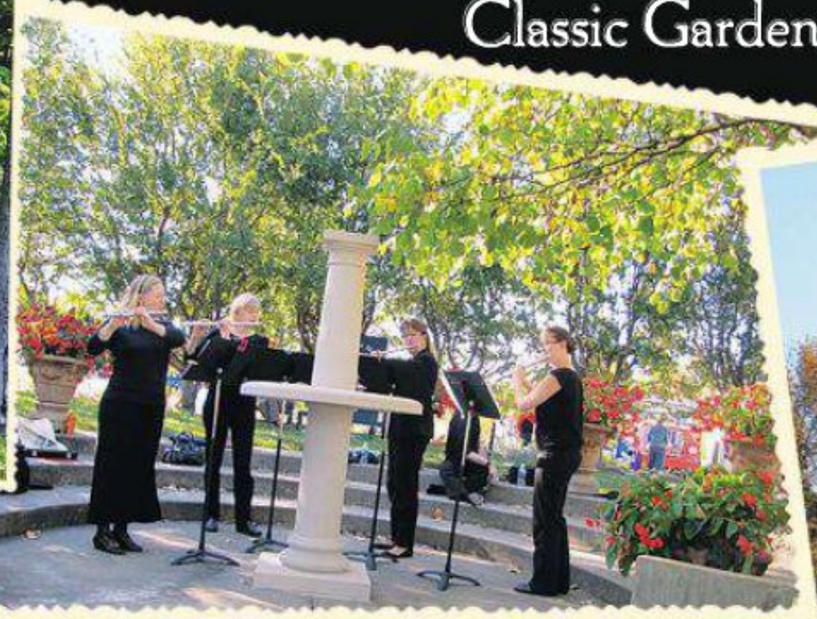
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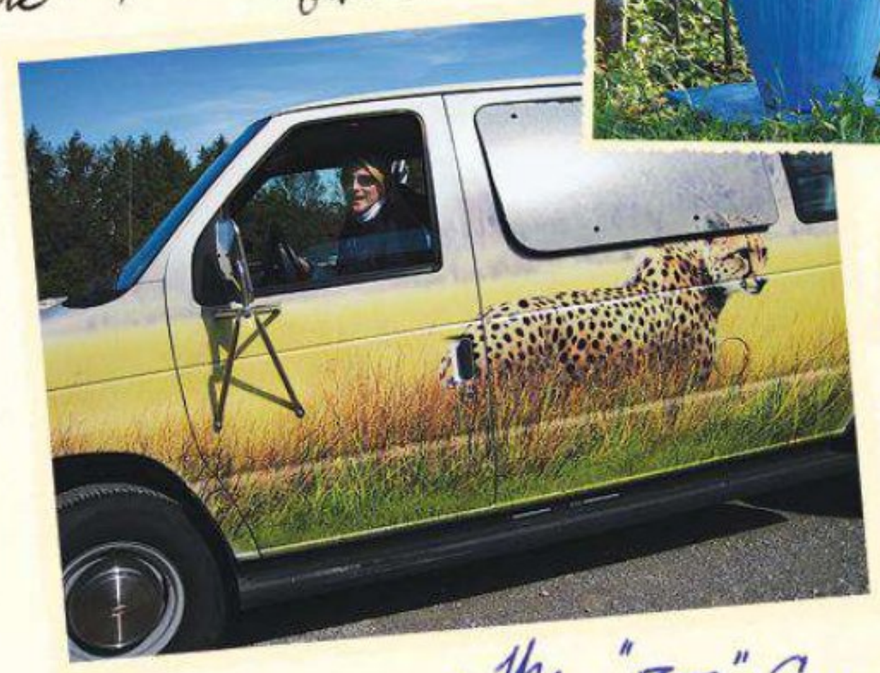
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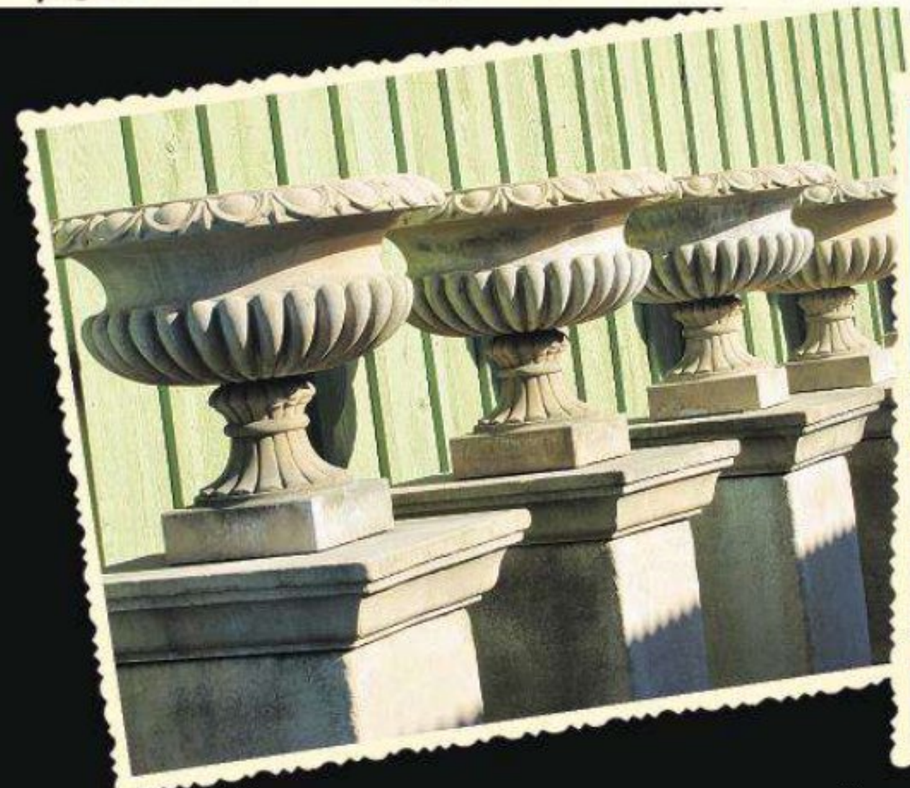
















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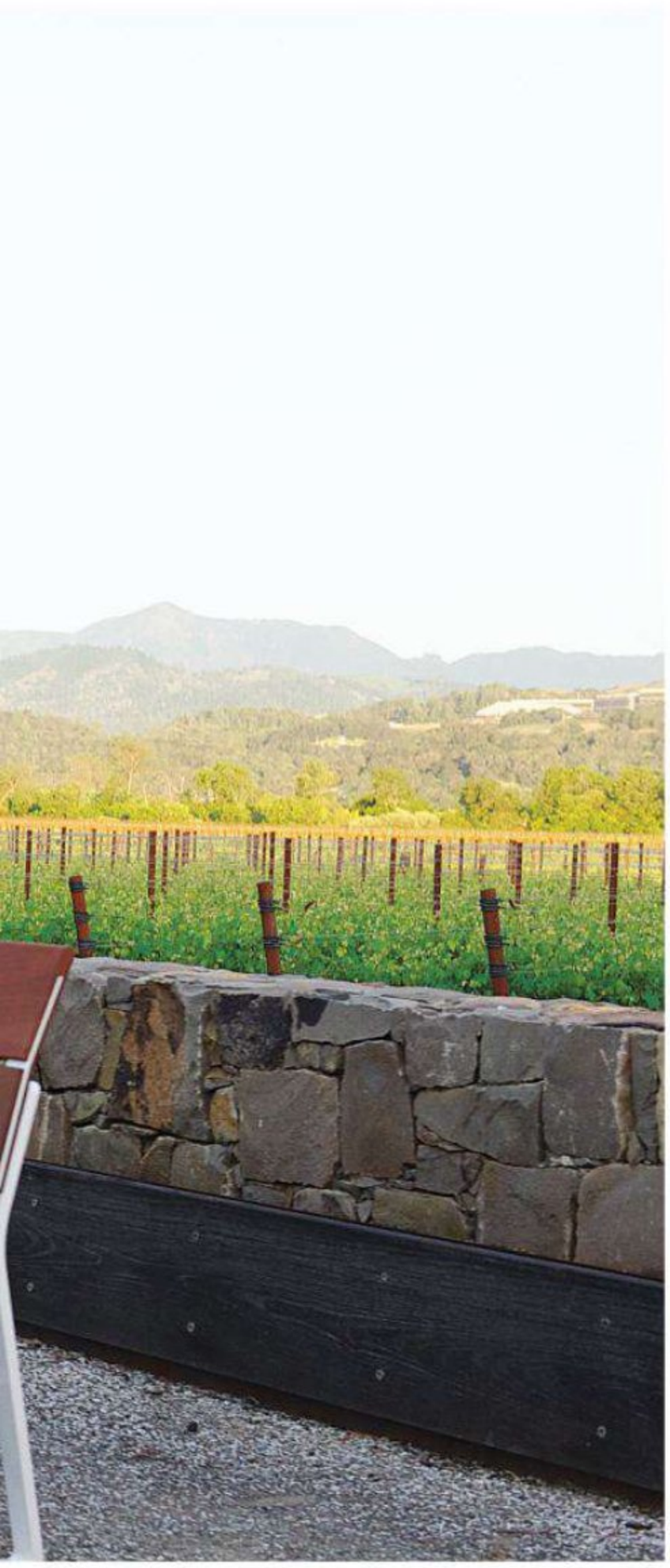
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LAM

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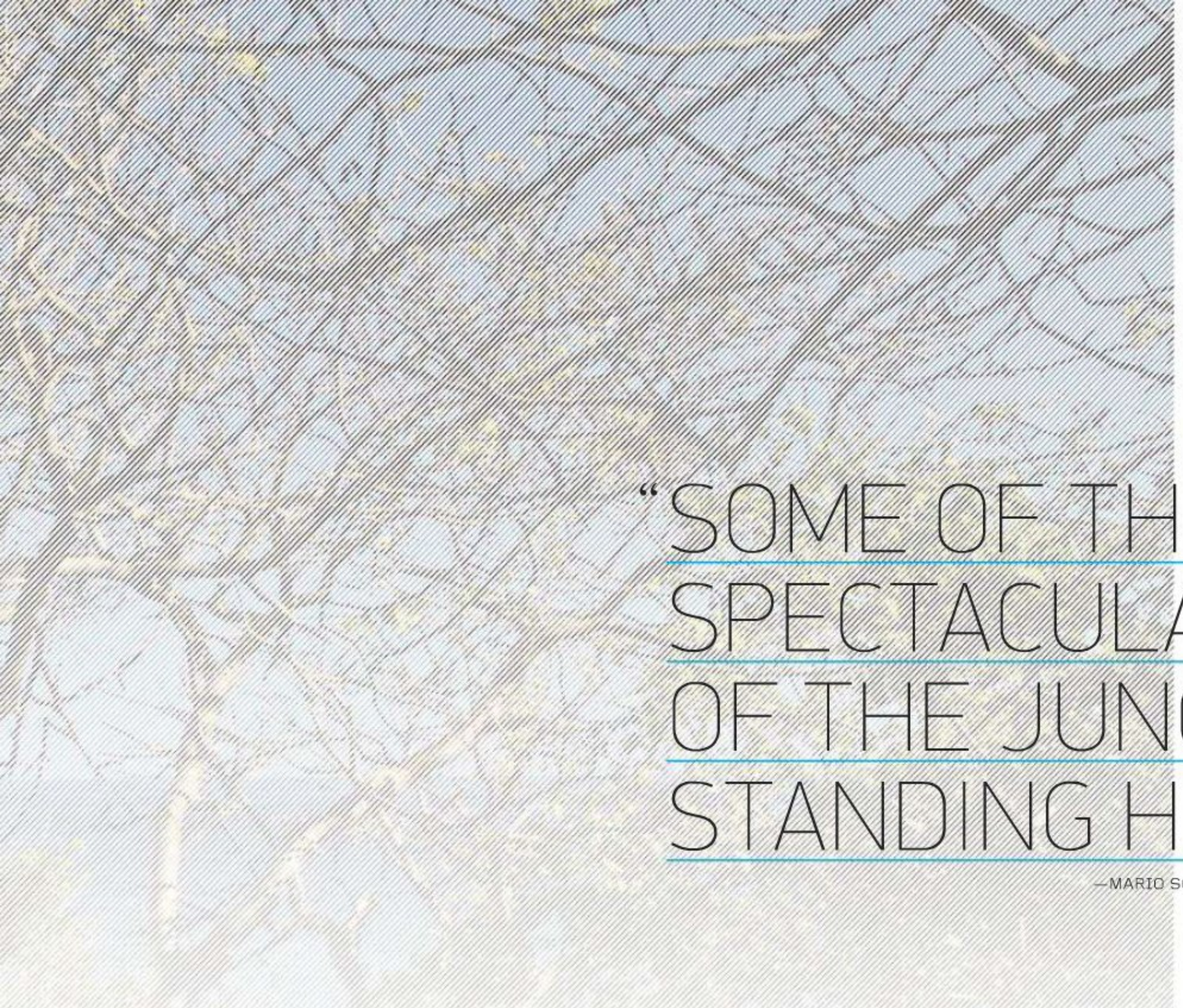
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“SOME OF THE MOST SPECTACULAR TREES OF THE JUNGLE ARE STANDING HERE.”

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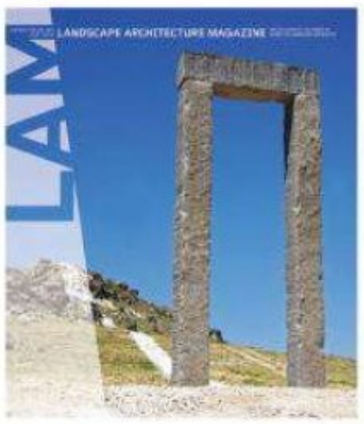
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ON THE COVER

Listen (2011), a 52-foot-high basalt arch near Goreme, Turkey, by Andrew Rogers, page 102.

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LANDSCAPE ARCHITECTURE MAGAZINE IS ALSO AVAILABLE IN DIGITAL FORMAT. ORDER THROUGH *WWW.ZINIO.COM/LAM* OR BY CALLING 1-888-999-ASLA (2752).

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Landscape Architecture Magazine (ISSN 0023-8031) is published monthly by the American Society of Landscape Architects, 636 Eye Street NW, Washington, DC 20001-3736. Periodical postage paid at Washington, D.C., and additional mailing offices. Postmaster: Send address changes to *Landscape Architecture Magazine,* 636 Eye Street NW, Washington, DC 20001-3736. Publications Mail Agreement No. 41024518. Return undeliverable Canadian addresses to PO Box 503 RPO, West Beaver Creek, Richmond Hill, ON L4B 4R6. Copyright 2012 ASLA. Printed on recycled paper. Subscriptions: $59/year; Canada and international: $99/year; students: $50/year; digital: $44.25/year; single copies: $7. Mexican or Canadian addresses have a $20 postage surcharge; other international addresses have a $50 postage surcharge. Nine percent of ASLA membership dues is for magazine subscription.

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THE BEST INSURANCE

Climate-change skeptics have little to fear from the outcome of the recent United Nations talks on the subject in Durban, South Africa, because they resulted in no meaningful action. That is not a big surprise. But as the climate conference opened in late November, yet another dark prediction emerged: Fatih Birol, the chief economist of the International Energy Agency, told a gathering at the Carnegie Endowment for International Peace in Washington that the rate at which humans are now burning fossil fuels will cause the Earth to heat up by almost 11 degrees Fahrenheit, or 6 degrees Celsius, over the next 90 years. A couple of weeks later, the Durban conference ended with the negotiators' promise to make a new climate treaty by 2015 that would take effect by 2020. There goes about one-ninth of the time Birol outlined.

AT THE CRUX OF ALL COMMERCE, INSURERS ARE WATCHING CLIMATE MORE CLOSELY.

But if climate negotiators seem determined to dither, several major insurance companies do not. Insurers are already registering the effects of an angry atmosphere and moving to protect themselves. Ceres, a Boston-based coalition of investors and public interest groups concerned with climate change and shrinking water supplies, released a report in September that shows rising worry among major insurance companies about the direct and rippling impacts of warmer temperatures on human lives and property. There are public health risks to consider, along with damage to infrastructure and real estate, crop losses, drought and famine, energy disruptions, and, when all systems fail, political upheaval and economic collapse.

Back in 2005, Ceres warned in a report that insurance trends weren't responding to climate-related issues. Its negative analysis prompted the National Association of Insurance Commissioners, which represents state insurance regulators, to require insurers to disclose their risk management practices around climate change to their states. Nationally, the effort fell victim to politics, but several states began to require the information anyway, among them California, New York, and Pennsylvania. This year, Ceres analyzed the disclosure statements available from 88 insurance companies across the industry spectrum to gauge how acutely they are heeding climate as the likely cause of more erratic and intense weather around the world. Summarizing the results, Ceres's president, Mindy Lubber, writes unhappily that only 11 of the studied companies have a formal climate change policy. Sixty percent of insurers studied had no coherent strategy. But there are signs everywhere that insurers' awareness levels are going to have to follow the sharp curve upward in their weather-related losses and claims, which are tracking well above property and casualty premium revenues. Not least of those signs is impatience among shareholders and regulators, because insurance companies could lose money and fail, and exorbitantly priced premiums would likely drive consumers into public insurance pools at taxpayers' expense.

If your clients haven't yet showed they're worried about climate change, they will before long. Governments and companies with real estate to develop, all of which must be insured, will be increasingly on guard against flooding, or the wells and rivers running dry. Swiss Re, the giant reinsurer, produced a fascinating report this year on the damage that drought-induced soil subsidence has caused in Europe to houses and big infrastructure alike—as much destruction to houses in France as floods have caused. The city of Chicago is adopting many safeguards, including a rethinking of the tree species it plants, to ensure they can withstand warmer years. The small town of Pinole, California, on San Pablo Bay near San Francisco, has a new 20-year plan that contemplates a sea-level rise of 55 inches by century's end, as well as the loss of shoreline access, wetlands, and species, more fires, and more flooding.

If you don't believe the climate is changing, chances are that your client does, and you'll need to deal with it anyway. If you do believe the climate is changing, then as a landscape architect you can put yourself ahead of the hard questions your clients are bound to have about reducing risk in design and planning projects. A working knowledge of the intense dynamics of climate, natural and not, will become only more valuable.



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LAM / LETTERS

SIT? THERE?

The cover of the November issue stopped me as soon as I pulled the magazine from my mailbox. The woman perched on what might be the single most uncomfortable-looking "lounge" chair I have ever seen propelled me to search immediately for additional images and the rest of the story. I was confident (a) that there simply must be other, more comfortable, even reasonably comfortable, seating on the "stunning quay for Green Bay," or (b) that the article would offer a critical perspective on designs that seem to have abandoned the primary lesson we learned from William Whyte, that "people sit where there are places to sit." Neither was true.

Of the 10 different seating options, it appears that only one (the simplest) is even passable as a place to rest. The images in the article support this assertion; the same woman doing her best on the cover appears twice more, posed in equally awkward positions on equally unfriendly benches (page 140 is my favorite.) Of the other nine photographs, we see people sitting in only one image. So, though one caption states that "the seating is designed to give ample choice of posture and purpose," the public evidently does not have the right posture or a compelling enough purpose to endure the discomfort.

After looking at the pictures, I read the story. The author does acknowledge the fact that seating is a problem and notes that his mother could not find a comfortable place to sit, that there is no place on site where people can sit across from one another, and that the angles in several of the benches simply do not work. However, he also states that he "normally...wouldn't harp on seating so much" (why not?) but that "this project is all about the seating." Exactly. Aren't they all, or at least most of them? Isn't that the point? In the end, he says, "If the seating were what seating should be, I would consider this one of the most interesting, contextually appropriate projects I have had the privilege to visit." Still, the overriding message of the article is that this design is, indeed, inspired.

Evidently we have forgotten what Whyte and his graduate students showed us. What is worse is that our profession's primary publication doesn't use examples from current practice to push us all to think more critically about our designs. But what is even worse is that the real losers in this game are the people who visit our parks—those whom we ostensibly have in mind when we make our parks and who may or may not see a bench that "seems to rise up from the ipe boardwalk." What they will no doubt figure out pretty quickly is that they, like the author's mother, can't find a place where they want to sit down. As a graduating MLA student, this is infuriating to me. Am I the only one?

JENNIFER MASTERS, STUDENT ASLA
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RESEARCH CULTURE

Kurt Culbertson's eloquent call ("Research Priorities," *Landscape Architecture Magazine*, November) for a national research agenda in landscape architecture is both timely and brave. Like its close relatives planning and architecture, landscape architecture is now a research-based profession. New performance-based standards such as the Sustainable Sites Initiative [an interdisciplinary partnership led by ASLA, the Lady Bird Johnson Wildflower Center at the University of Texas at Austin, and the U.S. Botanic Garden] require design decisions to be transparent and backed by evidence and science. This changes everything for the profession, where previously expressive form must now be directly informed by rigorous case studies and research of both the empirical and critical variety. What is required now for the profession is a new "culture of research." As many offices are not prepared to fully integrate research advances into their practices, they must turn to the recent graduates trained in this tradition. It is time for accredited programs at both the undergraduate and graduate level to also fully embrace this new culture and train their students in the research methods and theories needed to move the profession forward.

MARK FRANCIS, FASLA
STAVANGER, NORWAY

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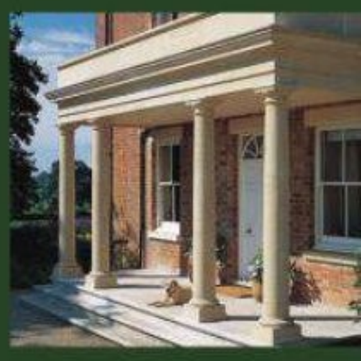
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FOREGROUND

NOTES AND REPORTS FROM THE FIELD

The old-growth forests of the eastern United States; a drone's-eye view of the landscape; and three letters that spell "landscape architect" in **NOW.** *Phragmites,* an invader way over your head; the likely doom of the Joshua tree; and blocks of phlox in **SPECIES.** The native wisdom of the nurseryman David Fross in **INTERVIEW.** New parks with a certain leguminous mascot in **PARKS.** How to stake trees, if you must, without tragedy in **NURSERY.** The lowdown on fake turf in **MATERIALS.** And garden ornament for folly or focal points in **GOODS.**

RICK MALOOF

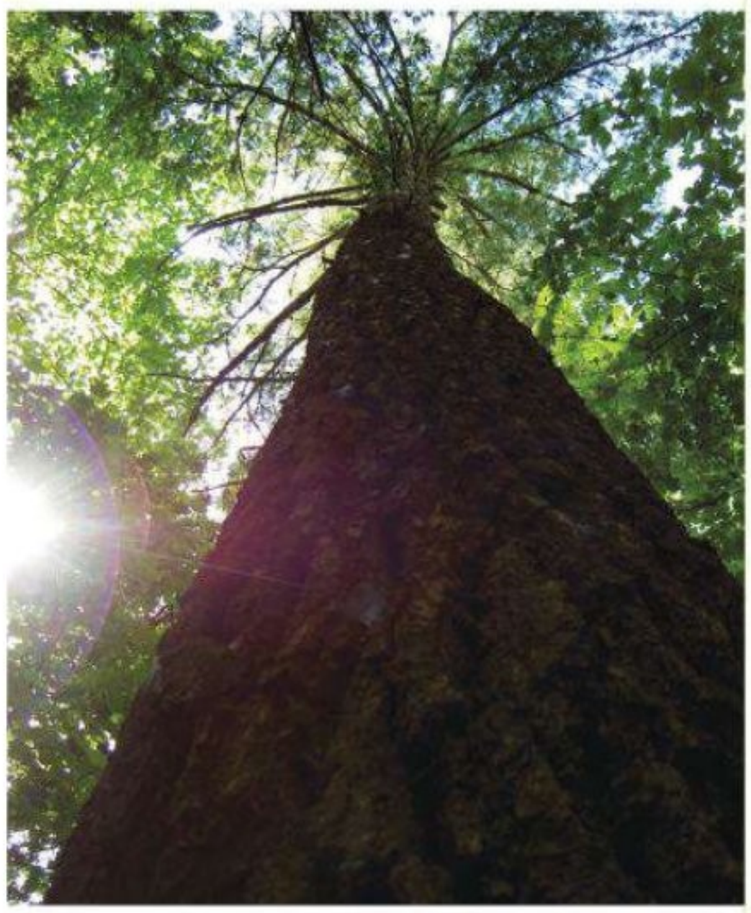
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SHADE OF ANTIQUITY

A MARYLAND ECOLOGIST EXPLORES A TROVE OF EASTERN OLD-GROWTH FOREST.

BY LINDA MCINTYRE, EDITOR OF NOW
Contact *lmcintyre@asla.org* or *@Linda_Mc* on Twitter.



FAR LEFT
Joan Maloof tracked down old-growth forest remnants in every eastern state.

LEFT
Ramsey's Draft in Augusta County, Virginia, is one of those described in *Among the Ancients*.

People who live east of the Mississippi River might think of old-growth forest as a luxury out of reach, only available to westerners with access to sequoia preserves or similar landscapes. But there are tracts of old-growth forest in all 26 eastern states.

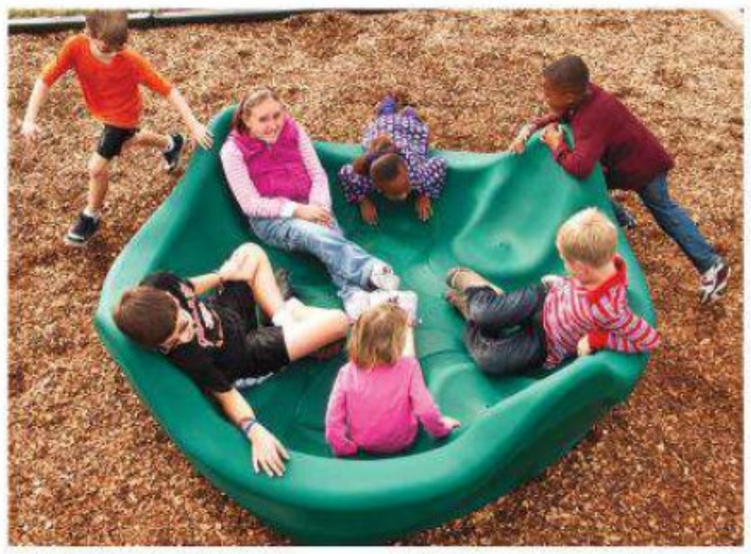
Joan Maloof, a professor of biology and environmental studies at Salisbury University on Maryland's Eastern Shore, has visited at least one old-growth forest in each of these states and chronicled her journeys in *Among the Ancients: Adventures in the Eastern Old-Growth Forests* (Ruka Press). After she published an earlier book that mentioned, in passing, an old-growth remnant in Maryland, she was deluged by requests for directions to the site. In light of this enthusiasm, she considered digging deeper into the biodiversity of eastern old-growth stands and publishing a paper in a scientific journal. Then, moved by the beauty of these landscapes, she created a guidebook of sorts to bring them to the attention of a general audience.

Early in *Among the Ancients,* Maloof makes clear that there is no strict definition of "old-growth forest," especially in a landscape as disturbed as that of the eastern United States. "I didn't want to split hairs," she says. "These are forests that have been undisturbed long enough to be doing their own thing." Most of them feature large, stately trees, but in some situations even the oldest trees are small. Some of the sites are enormous; some are small and practically urban. The old growth on Sand Island in Wisconsin consisted of nine white pines. All sites are open to the public.

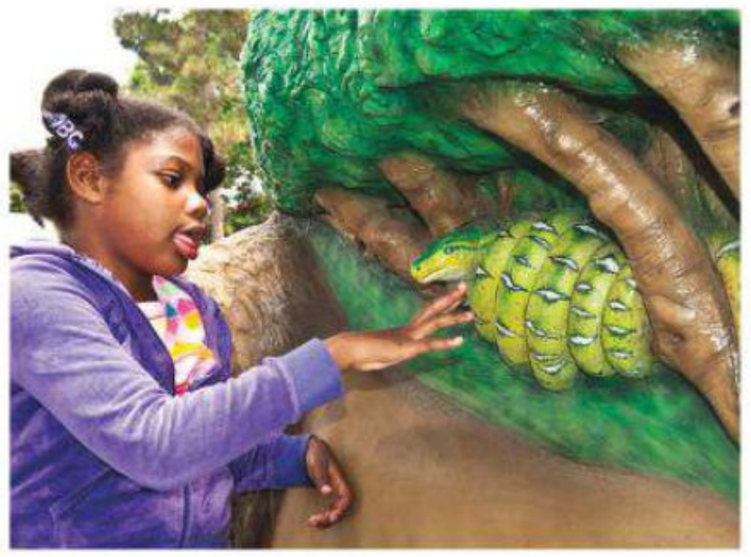
Maloof explores how the forests reflect the history of their sites and how, as a group, they embody the diversity of the American landscape. A stand of forest in New Jersey, for example, was, in the early 19th century, given to an escaped slave by the Quaker farmer he worked for. The former slave and his family protected it for generations, and the local government, which now owns the land, named it Saddler's Woods in their honor. Longleaf pine was once the predominant forest type in the eastern United States, but 98 percent of these forests, which grew in temperate areas on relatively flat land without a woody understory, have been harvested—easy game for timber cutters.

The author also chalks up the loss of a lot of that diversity to the imperatives of forest management—mostly logging, but also well-intentioned ↘

RICK MALOOF, LEFT; DAVID MCDANIEL, RIGHT

























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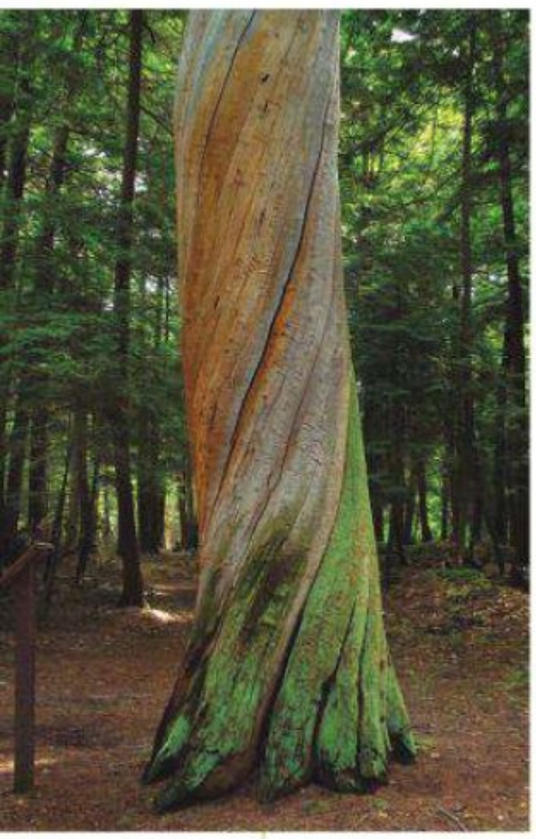
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practices such as clearing "snags," or standing dead trees, off a site. This removes habitat for a lot of birds, animals, and insects that contribute to a healthy forest ecosystem.

Perhaps the most striking aspect of the project, Maloof says, was the fact that she was driving hundreds of miles to get from one old-growth forest to the next. "That's when I realized we must begin to reverse some of this destruction," she says.



So she's proposing an Old-Growth Forest Network. The plan is to preserve one site in each U.S. county where forest naturally grows—2,370 counties out of the 3,140 total—as forest. Maloof estimates that as much as two-thirds of such a network could be put together from existing public lands—national or state forests, for example, or wildlife refuges. Other possibilities include land managed by trusts or nonprofit groups such as the Nature Conservancy and donations by private landowners.

The effort is still in its early stages, but Maloof is optimistic. "No one has proposed anything similar, to my knowledge," she says. "But I have had many offers of help." If the national park system is "America's best idea," she says, then a protected forest system can be our next idea. ●

For more information, visit *www.oldgrowthforest.net.*

ABOVE
This dead chestnut tree in Pennsylvania's Cook Forest shows the spiraling effect of blight.

RICK MALOOF

NEXT-CENTURY CONSERVATION

WILDLIFE REFUGES GET IN TUNE WITH THE TIMES.

Wildlife refuges aren't pastoral landscapes. These protected but multipurpose spaces are crazed by urbanization, population growth, and habitat loss and fragmentation, along with state and federal budget cuts. The National Wildlife Refuge System (NWRS), part of the U.S. Fish and Wildlife Service, is experimenting with different ways to protect these lands for the creatures who depend on them, including students, hunters, anglers, bird-watchers, and nature lovers.

The agency's approach is found in a new 10-year plan, *Conserving the Future: Wildlife Refuges and the Next Generation,* designed to keep refuges vital with the help of various nongovernmental groups.

The first U.S. national wildlife refuge was designated by President Theodore Roosevelt in 1903, and today the system comprises 555 refuges totaling more than 95 million acres spread over every state and territory. The NWRS works with state conservation agencies, environmental groups, and outdoor sporting associations, as well as the independent nonprofit advocacy group National Wildlife Refuge Association (NWRA), to promote the importance of refuges.

Among the strategies outlined are the creation of an urban refuge initiative to make it easier for people to easily visit refuges, expansion of hunting and fishing opportunities, more collaboration with a wider range of private and regional conservation groups, an inventory and monitoring program to improve management of the system's land and water resources, a plan for assessing climate change impacts, and a plan for the strategic growth of the system.

"We used technology and our partners to get the word out and get as much feedback as possible," says Cynthia Martinez, the new NWRS deputy chief.

The Department of the Interior (DOI), the agency that oversees the system through its Fish and Wildlife Service (FWS), is moving fast on some of these steps. It has announced a proposal for a 150,000-acre refuge in Florida that would include about 100,000 acres of privately owned and managed land—much of it pasture owned by ranchers—protected with conservation easements and cooperative agreements, as well as about 50,000 acres of government-purchased land. The Everglades Headwaters National Wildlife Refuge would also link to more than 600,000 acres of conservation land managed by other organizations such as private land trusts. The DOI is reviewing public comments on the plan.

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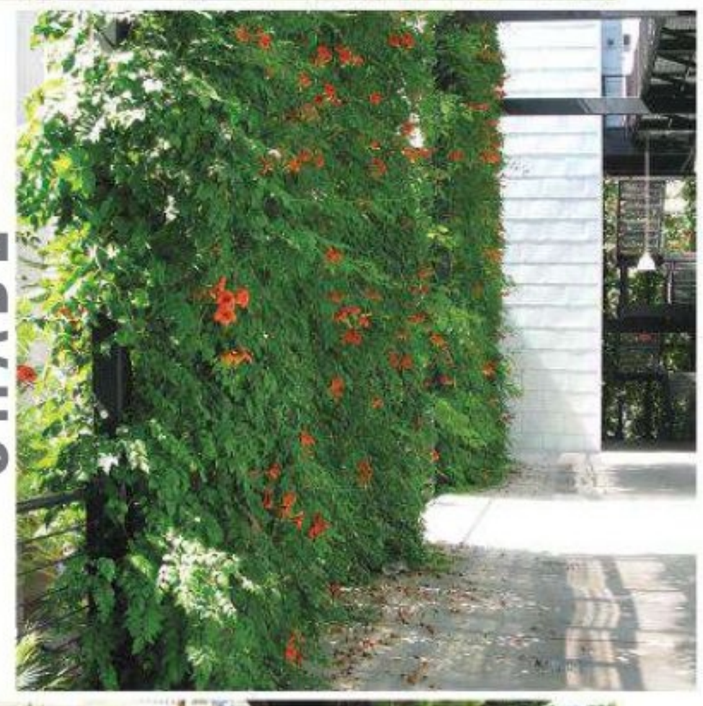
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ABOVE
Lake Wales Ridge National Wildlife Refuge is on the edge of the proposal's Everglades conservation area.

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↘ The Everglades proposal, with its emphasis on shared management and leveraging existing efforts, would save the system money. It also reflects an effort to calm area landowners' concerns about a potential "land grab" by the federal government at a time of distrust of government and a dismal real estate market, even though FWS does not use eminent domain and only buys land from willing sellers. "I think there has been a trust deficit," says David Houghton, the NWRA's vice president for conservation programs. "We're trying to focus on the 80 percent we agree on, not the other 20 percent."

Efforts are also under way to establish more refuges close to cities, making it easier for urban dwellers, especially kids, to immerse themselves in nature. Currently there are only a few urban properties in the system, including the Bayou Sauvage National Wildlife Refuge in New Orleans, the Rocky Mountain Arsenal National Wildlife Refuge in Denver, and the Detroit River International Wildlife Refuge near Detroit. But the DOI announced in September that a 570-acre site on the Rio Grande, five miles south of downtown Albuquerque, was on track to become New Mexico's first urban refuge.

The property, a former dairy farm most recently used to cultivate hay and straw, will undergo some dramatic changes once the purchase is completed (the proposal has been approved and the FWS is working with its partners to line up funding). "Our goal is to re-create wildlife habitat through projects like bringing bosky riparian wetlands out from along the river and using biofiltration to clean stormwater," says Jose Viramontes, a public affairs specialist with FWS's southwest regional office. "There will also be a trail system and educational facilities."

Staying relevant for an urbanizing population won't always mean buying more land, says Martinez. She says the agency will be working with parks and rec departments, trail groups, school districts, and others: "We recognize that we can't do everything ourselves, in a vacuum."

For more information, or a copy of the report on the future of the wildlife refuge system, visit *http://americaswildlife.org/vision.* ●

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—NWRS DEPUTY CHIEF CYNTHIA MARTINEZ

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DRONES ON THE RANGE

UNMANNED AIRCRAFT OFFER NEW VIEWS OF WESTERN LANDSCAPES.

BY TIM NEWCOMB

The U.S. Department of Agriculture's Agricultural Research Service (ARS), already engaged in manned aircraft monitoring research, has expanded into the use of unmanned aerial vehicles (UAV) to track changing landscapes over acres of rangeland from New Mexico to Idaho.

Partially funded by the Bureau of Land Management, an ARS team at the Jornada Experimental Range in Las Cruces, New Mexico, joined with New Mexico State University researcher Andrea Laliberte to assess the effectiveness of digital images of land, shot from UAVs, to determine landscape changes, plant types, and erosion control needs.

Since 2006 the team has tested two UAVs flying 700 feet above the ground, each equipped with two mounted cameras. One is a regular point-and-shoot Canon and the other is a multispectral sensor using imagery in the blue to near infrared range, which Laliberte says is helpful in assessing the health of vegetation. The 700-foot height is based on camera field of view, desired image resolution, and federal aviation rules that stipulate crews on the ground maintain a visual connection with the aircraft.

Researchers get better coverage of large spaces than with samples taken at ground level, says Laliberte, and much more detailed analysis than with images taken at a greater height. Spot checks performed at grade have proven the work to be accurate.

Jeffrey Herrick, a researcher on the project, says the UAV model allows scientists and land managers to rapidly assess and monitor vegetation in remote locations that are too difficult or expensive to access on the ground and too small to justify contracting piloted aircraft with large mapping cameras.



LEFT
A team of scientists at the Jornada Experimental Range prepares to launch an unmanned aircraft from a catapult.

INSET
This arrow-leafed balsamroot was photographed from an altitude of about 300 feet.

So far, crews have mapped 780 square kilometers in New Mexico, Idaho, and, as of October, Arizona. The data is used to create mosaics in one-square-mile segments for use by land managers in a variety of applications. "We have flown missions for archaeologists, researchers interested in determining invasive grass species, and researchers trying to determine sample plots on the landscape," Laliberte says.

The group plans to add a third vehicle to the USDA-owned fleet. While they currently fly a six-foot-wingspan craft weighing 20 pounds, the larger aircraft will have a 13-foot wingspan and add 30 pounds more payload, allowing it to carry more sophisticated (and heavier) camera equipment.

Terry Booth, an ARS researcher based in Wyoming, originally planned to use UAVs in 2000, but the strict Federal Aviation Administration rules pushed him into the manned aircraft realm. Now he sees value in both. "I feel UAVs have application for small areas where line of sight can be maintained," he says. "However, for landscape-scale projects, the (manned aircraft) appears to be the right tool for the foreseeable future. It allows for multiple resolutions to be captured simultaneously." ●

STEPHEN AUSMUS, ARS, LEFT; TERRY BOOTH, ARS, INSET

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YOUR NEW INITIALS

BY DANIEL JOST, ASLA

RLA, CLA, LLA...what does it all mean? You often see these abbreviations on landscape architects' business cards. With no nationally recognized acronym for a registered or licensed landscape architect, many abbreviate the title of their state's stamp, which varies by state. Or they make up their own abbreviation. "There is no consistent way for landscape architects to indicate they're licensed," says Julia Lent, the director of government affairs at the American Society of Landscape Architects.

But ASLA, which publishes this magazine, is hoping to introduce a universal acronym, PLA, which stands for professional landscape architect. ASLA's board of trustees approved the designation at its meeting in San Diego last fall. It is similar to the initials used by professional engineers (PE) and land surveyors (PLS).

The decision to create a universal designation for licensed landscape architects follows a contentious debate over whether licensure should be required for full membership in ASLA, which allows people to use the acronym ASLA after their names. It is currently possible for graduates from an accredited landscape architecture program with three years of work experience to become full members of the society, even if they are not licensed in any state.

Some ASLA members point out that the American Institute of Architects requires architects to be licensed in order to put AIA after their name. Now that all 50 states require licensure for those who call themselves landscape architects, many believe it is time to follow the AIA's lead to bring more prestige to the ASLA designation.

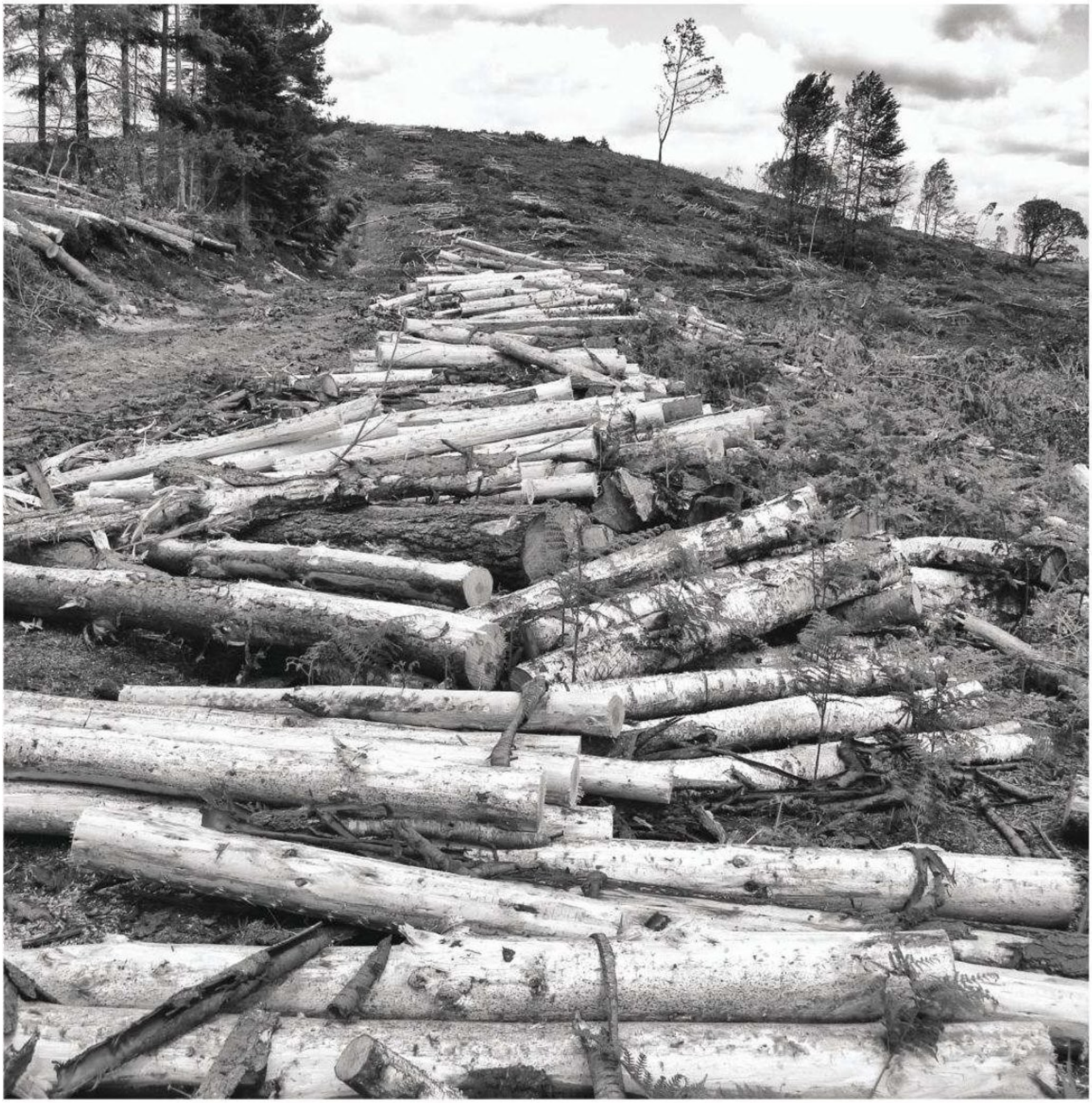
But a report by ASLA's Licensure Committee in February 2011 strongly recommended against requiring licensure for full membership in the society. Its primary reason was concern about alienating members who worked in the planning field, the nonprofit sector, academia, and public practice, where licensure is not always required and many employers are unwilling to pay for it. "Landscape architecture as a discipline extends beyond its legal definition," reads the committee's report, "and, therefore, ASLA membership criteria should accept all those with a landscape architecture background as full members."

There were also concerns about alienating younger members and the logistics and cost of tracking members' licensure. ASLA is not responsible for overseeing licensure, which is handled by individual states, and how the society would keep track of people's licensure status was unclear. "ASLA couldn't be the policemen of licensure," says Lent. "We wouldn't want the liability of that. If a state revoked somebody's license, we wouldn't necessarily know."

Finally, requiring licensure for those who use ASLA after their names would not address confusion about licensure credentials. ASLA could never become a universal signifier for licensed landscape architects because only members of the society are allowed to use the designation. "Architects have a similar problem," Lent says. "A lot of people use AIA, but not all licensed architects are members of the AIA." So some architects use LA, for licensed architect.

PLA can be used by any licensed landscape architect in any state, whether you are a member of ASLA or not, Lent says. Those who are not licensed will be legally prohibited from using the designation in the 50 U.S. states; it is an abbreviation that signifies you are licensed or registered in your state. (The District of Columbia does not have licensure for landscape architects, so anyone can call himself a landscape architect.)

For more information on the new designation, why PLA was chosen over RLA, and other pressing questions you might have, read ASLA's fact sheet on the subject at *www.asla.org/uploadedFiles/CMS/Government_Affairs/PLA%20Fact%20Sheet.pdf.* ●





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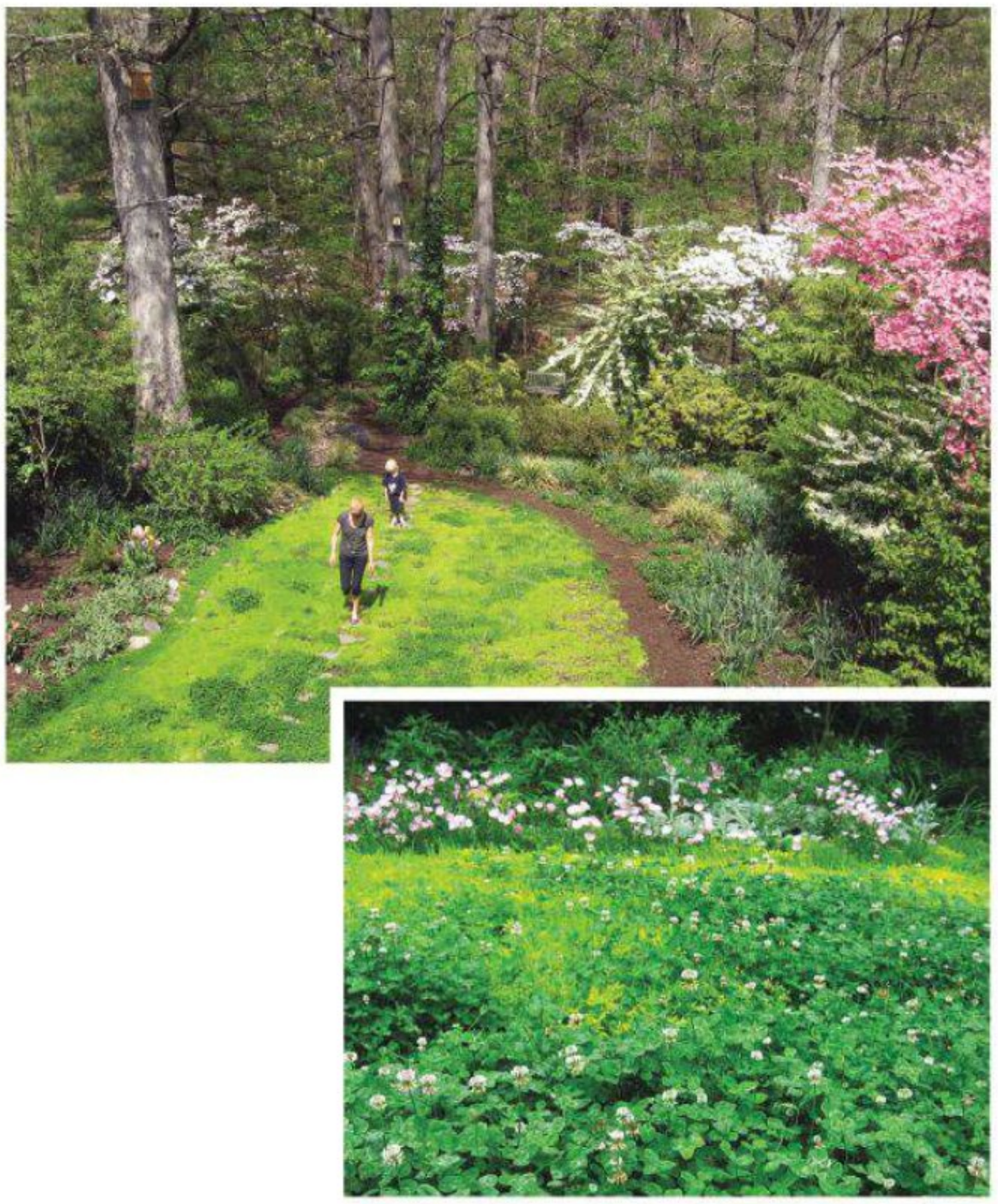
A FLICKR POOL PROVIDES INFO, SEEKS INPUT.

The Lawn Reform Coalition, an informal group of gardening and environmental advocates, has established a group page on the photo-sharing site Flickr to exchange information about ground covers that can be used for lawn-type plantings. And they're hoping landscape architects will join the discussion.

At *www.flickr.com/groups/lawn_alternatives,* the site features images of low-growing ground covers, along with cultural requirements and information such as tolerance of foot traffic and seasonal changes in appearance. The group's goal is to establish a searchable database for designers and home gardeners. Images uploaded to the site should include tags detailing where the photo was taken; the plants' USDA hardiness zone; full sun, part sun, or shade; drought tolerant, low water, or moderate water; evergreen or deciduous; and, if applicable, native.

"We want people from all over the country to know about and use it, and to share their experiences with different plants," says Susan Harris, a garden blogger and member of the coalition. "A lot of people suggest planting vegetables or a meadow instead of a lawn, but for those who want that neat and tidy look, there's not a lot of information. This group is about sharing pros and cons, and showing how plants look in different situations and climates and in all seasons."

Marketing is not part of the package. To keep the site free of sales pitches from growers and nurseries, only designers, public gardens, and homeowners are allowed to post. For more information on the Flickr group and lawn alternatives in general, or to join and contribute your own photos, visit *www.lawnreform.org.*



THE LAWN REFORM COALITION WANTS PEOPLE TO SEE THE MANY ALTERNATIVES TO GRASS MONOCULTURES.



TOP AND INSET
Garden blogger Susan Harris has experimented with *Sedum* and clover in her own former lawn.

RIGHT
The site aims to show plants in all seasons, not just when they look their best.

COURTESY SUSAN HARRIS

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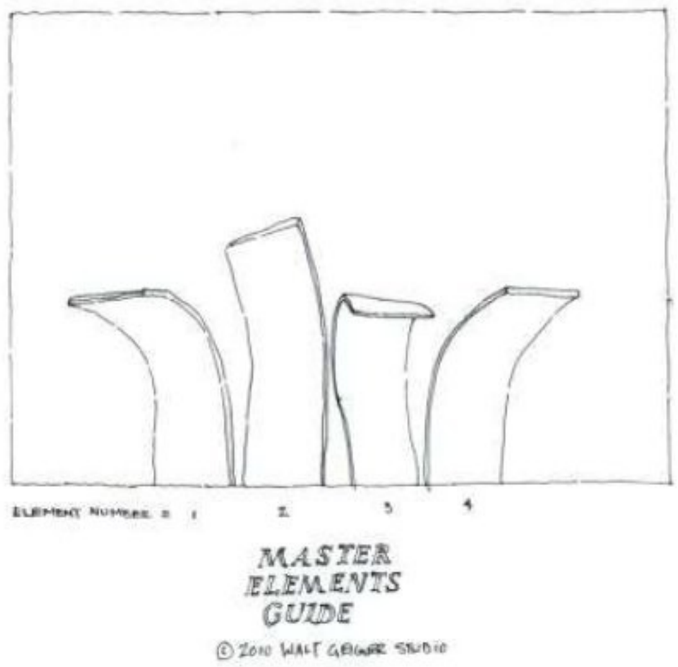




NEW WAVES

BY LISA SPECKHARDT

Along International Drive in Orlando, Florida, where most tourists are bound to find themselves at least once before leaving town, there are four sets of new bus shelters that look like big shrimp crackers by the roadside. Three more sets are planned. The curvy white shelters were designed by the artist Walt Geiger, who studied landscape architecture as well as architectural engineering, and his collaborator John Marhoefer at Entech Creative, a production engineering company based locally that created the giant keyboard Tom Hanks and Robert Loggia danced on in the movie *Big*. The client, the Central Florida Regional Transportation Authority, known as LYNX, asked the designers to keep the costs of the shelters close to those of regular bus shelters; to do that, Geiger and Marhoefer wrought the forms from a composite with an internal honeycomb and a fiber-reinforced polymer skin to create strong, curvilinear shapes. The shelters have to hold firm in hurricane-force winds, Geiger says, "because these things can't end up in the next county." ●

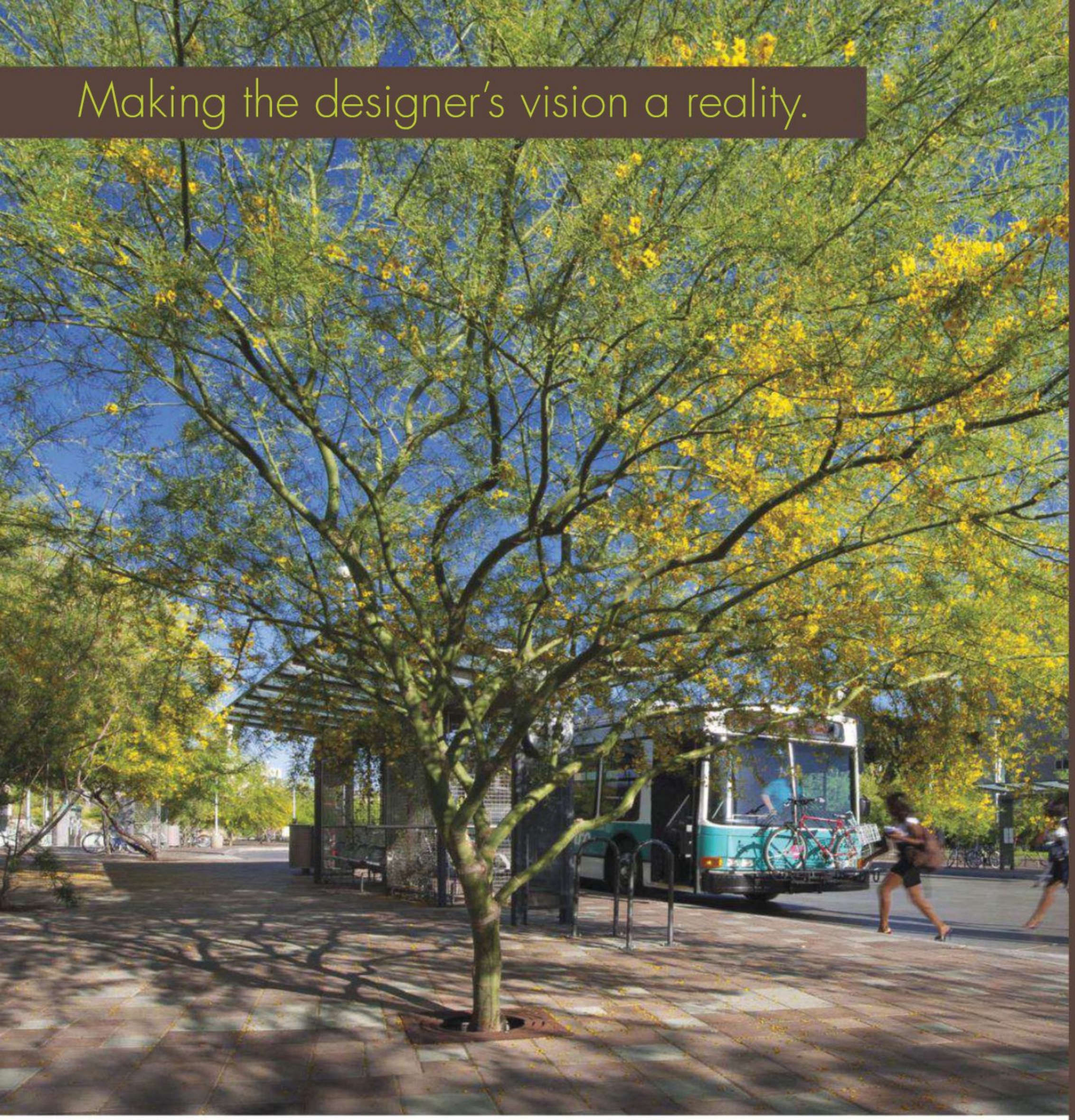


TOP
The shelters/sculptures were built for LYNX, the area's bus system.

LEFT
The design is modular so that busy bus stops may have a sculpture with five forms, and lesser-used sites could have only two or three.

BOTTOM
A page from Geiger's sketchbook.

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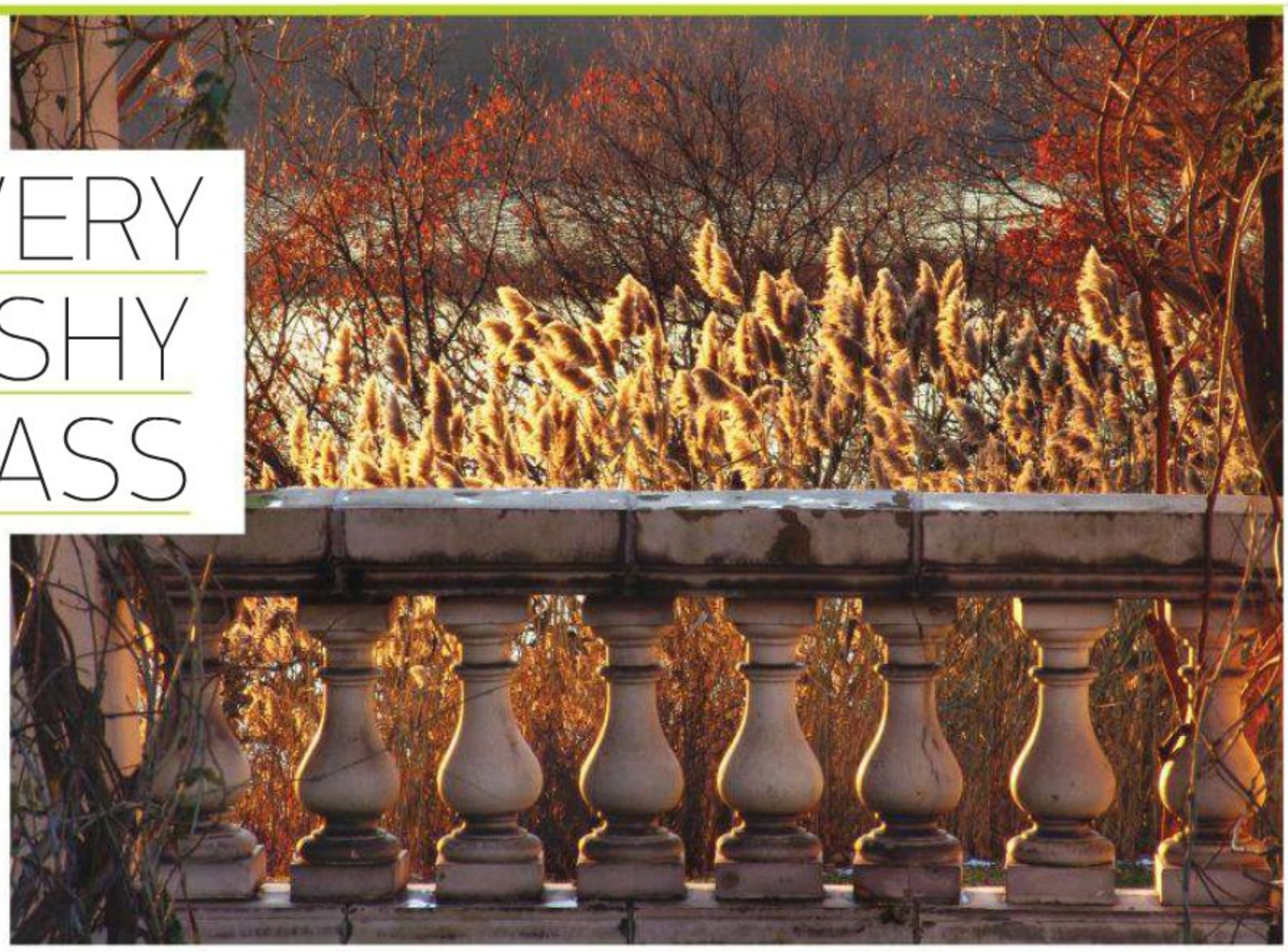
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NOTES FROM THE WORLD OF LIVING THINGS

BY CONSTANCE CASEY

A VERY PUSHY GRASS



LEFT
Phragmites, an invasive plant that's sometimes cursed, sometimes tolerated, glows in the setting sun at the Bard College campus.

RICK DARKE

Is it a tall, handsome reed with a dashing plume or a rampaging alien pest? Is the introduced European form of *Phragmites australis* a foreigner we can live with or the botanical equivalent of the Zebra mussel?

The rude good health and alarming spread of the alien *Phragmites* have become flash points for the already heated argument over native versus introduced plants. In the past 100 years, the European genotype has spread from a few small populations to swaths covering thousands of acres of North American wetlands. It's one of the major targets of state and federal invasive plant control, with millions spent per year on the difficult task of stopping its spread. Even if all the stems and seed heads are removed, a tiny piece of rhizome can break off, float across a lake or downriver, and start a new patch.

The plant's aggressive behavior is something of a puzzle, though as is often observed, our penchant for creating disturbed areas benefits nonnatives. Large populations of *Phragmites* are popping up in areas where that plant has never been present, growing more abundantly and densely than before. The plant probably reached North America in ships' ballast, or as packing material for 19th-century cargoes. Uncommon in the 1800s, it's now present in 48 states and southern Canada.

Various species of *Phragmites* grow in marshes all over the world. (The name comes from *phragma*, Greek for fence. The description *australis* means simply from the south; the plant probably originated in the Middle East.) Our native *Phragmites* ssp. *americanus* has been here since at least as far back as the Pleistocene, when it was consumed by the giant sloth, the prehistoric herbivore whose fossilized dung reveals much about the flora of its era. A Yale University researcher, Kristin Saltonstall, analyzed DNA from *Phragmites* collected from all over the world and identified the type she calls haplotype M as the culprit replacing North American natives.

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PHRAGMITES QUICKLY FILLS CHANNELS AND TIDAL CREEKS, AND MOST CONTROL STRATEGIES HAVE BEEN INEFFECTIVE.

↘ This 'M' *Phragmites* doesn't mind polluted water, soil, or air. Like many invasive organisms, it has the advantage of having left its enemies—mainly stem- and rhizome-chewing insects—behind. A striking example of how the plant takes over can be seen in the Meadowlands of northern New Jersey, where European *Phragmites* makes up close to 100 percent of the tall grasses springing from oil-soaked marshland to wave in the exhaust-laden breeze.



Taller (up to 15 feet) and more thickly growing than the native, the European *Phragmites* blocks light to other plants' foliage. What you can't see from the New Jersey Turnpike or the train is the dense underground net of roots and rhizomes—80 percent of the plants' biomass. The rhizomatous runners can spread horizontally 10 feet in a growing season.

The grass foliage can look beautiful from the car or train—fresh green in spring, mauve in winter sunsets. Acceptance, let alone appreciation, is not an option, though, say many environmentalists. Most conservation organizations believe that control is imperative, because along with crowding out native plants, the European *Phragmites* fills in channels and tidal creeks, changing the marsh structure. It's clear that this superior competitor shifts plant communities from mixed to monoculture; it's harder to know if it alters wetland fauna. Those arguing for some tolerance point out that red-winged blackbirds don't distinguish between foreign and native when building their nests.

The control strategies tried in the past couple of decades—basically surgical and chemical—are drastic and often ineffective. The surgical tactic is cutting or disking. Cutting (a plain old hedge trimmer is recommended) has to be repeated at least every two years. Disking doesn't work because it chops the rhizome into bits that sprout like the dragon's teeth of Greek myth.

The chemical approach is to spray with glyphosate, specifically the herbicide Rodeo, considered safe in wetlands. This can work in small areas, with careful monitoring but, like mowing, has to be repeated.

How bad would it be to let the immigrant *Phragmites* roam? The light-hearted title of a 2003 forum on the topic suggests it might not be the end of the world: *"Phragmites australis:* A Sheep in Wolf's Clothing?"

Rick Darke, author of *The Encyclopedia of Grasses for Livable Landscapes,* says he's tired of people vilifying *Phragmites.* "People call it the plant from hell," he says, "but no one has a reasonable suggestion of what to do with it except spray, with no hope of succeeding."

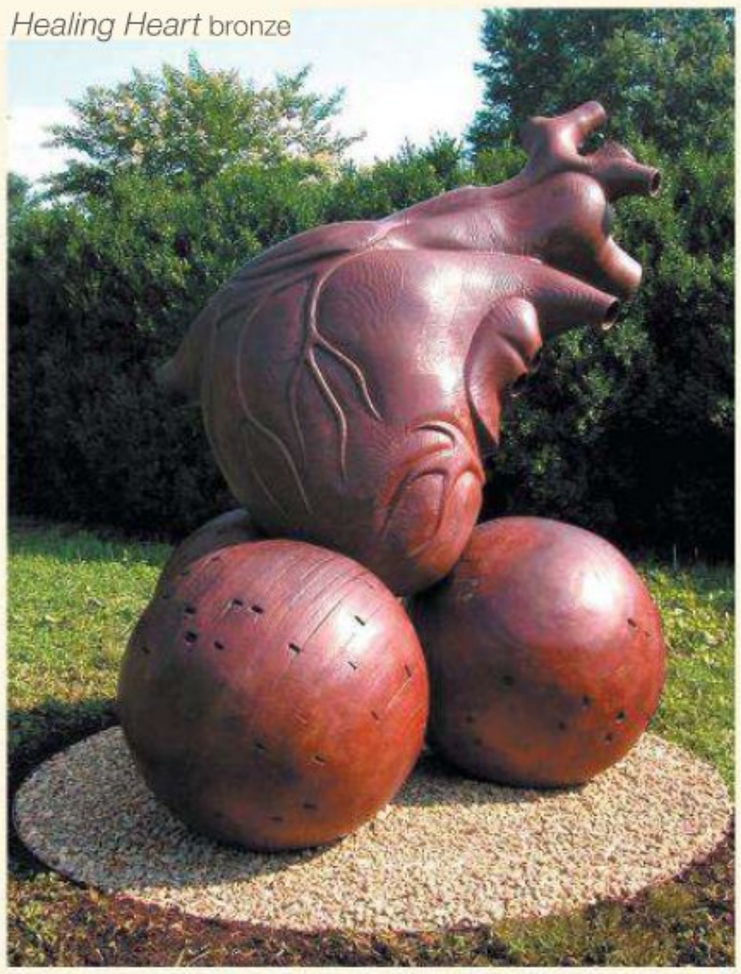
One perhaps reasonable, though ambitious, approach is to import some of the 151 insect species that fed on *Phragmites* back in the Old World. Bernd Blossey, assistant professor at the Ecology and Management of Invasive Plants Program in Cornell's Department of Natural Resources, admits that eradication is impossible. But he hopes abundance and spread can be reduced by biological control. (The man has a track record—he discovered a beetle that eats purple loosestrife.) The tricky part is that the little creatures—gall midges, stem-boring insects, and moth larvae, among others—have to be highly host-specific, targeting only the undesirable *Phragmites.* ●

ABOVE
Phragmites pops up on inhospitable sites. This is at IKEA's Brooklyn store during construction.

RICK DARKE

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Healing Heart bronze

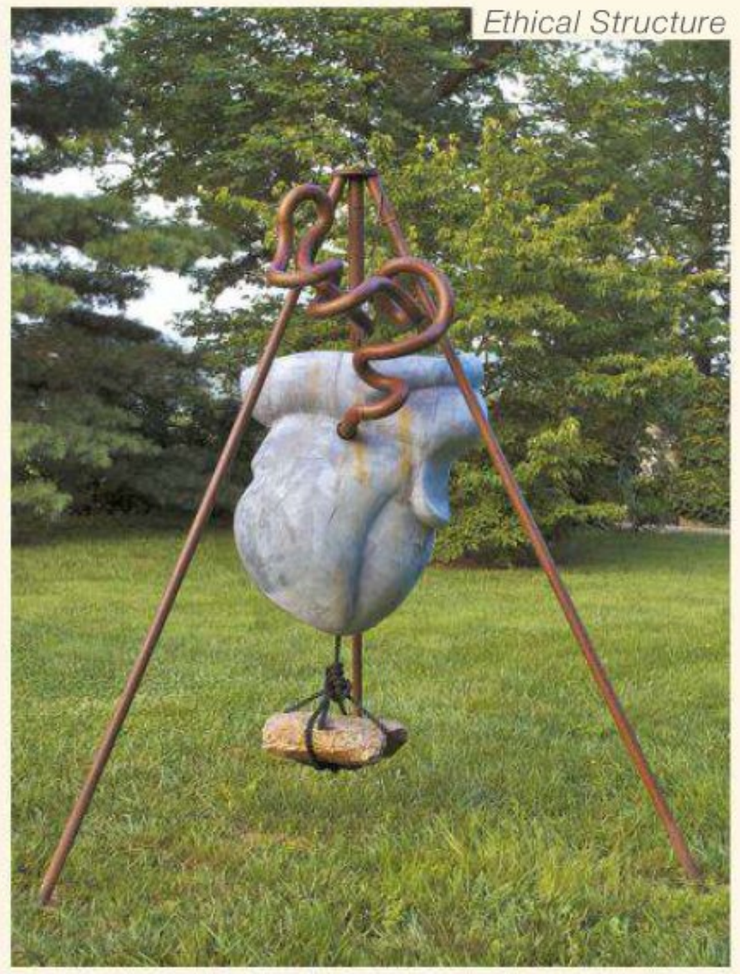


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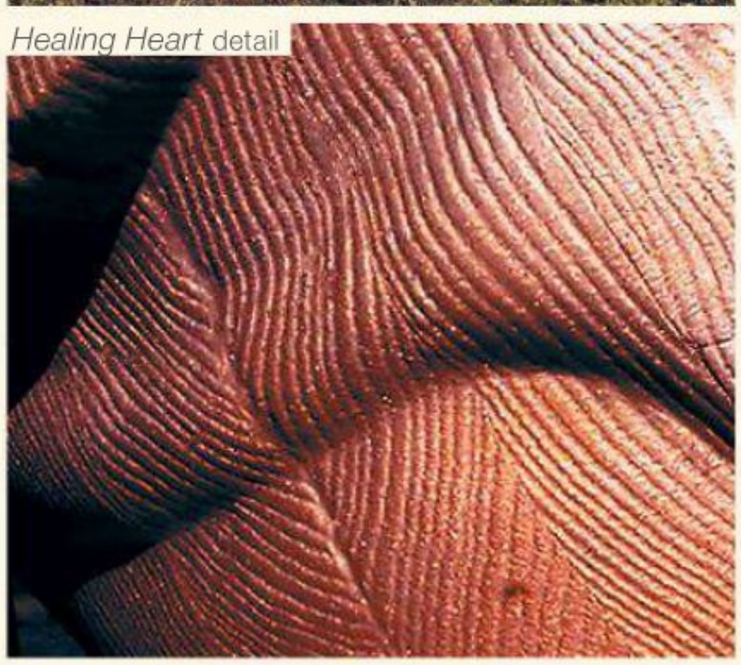
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Ethical Structure



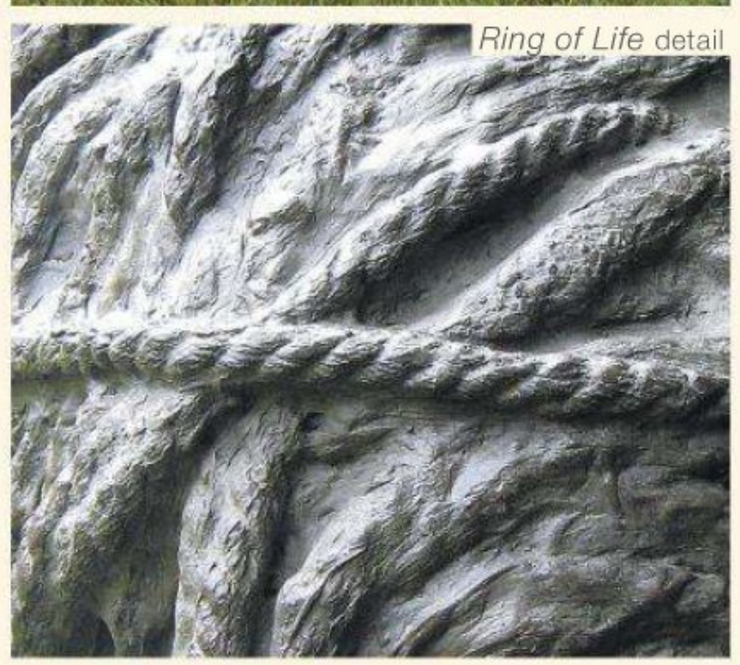
Healing Heart detail



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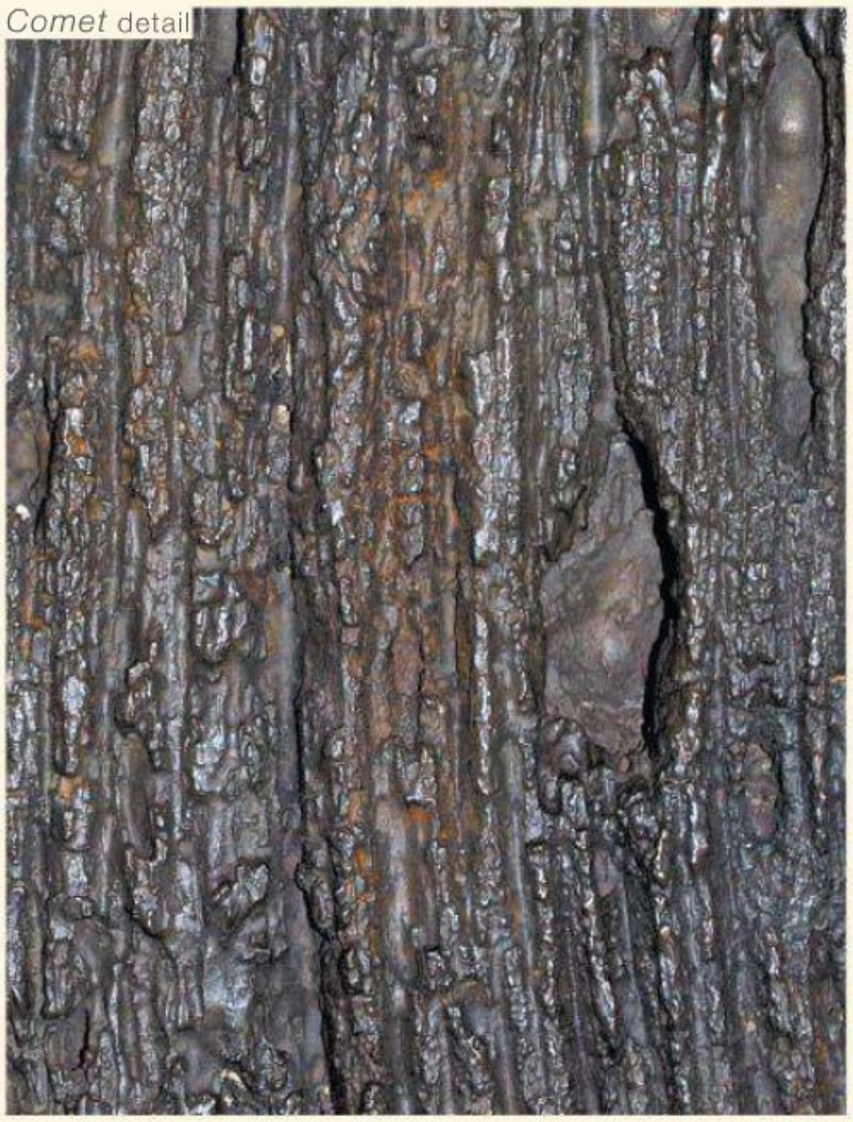
Ring of Life detail



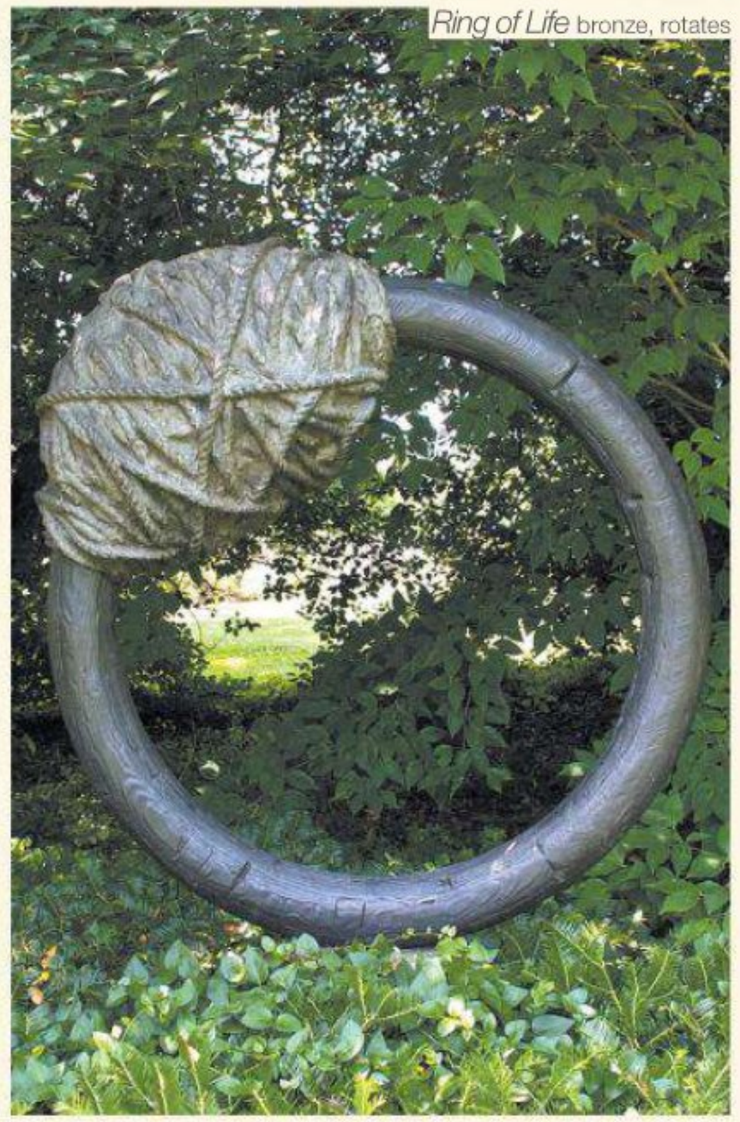
Comet bronze



Comet detail



Ring of Life bronze, rotates



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UP IN ARMS



TOP
Rising temperatures threaten the Joshua tree, icon of the southwestern desert.

BOTTOM
Coyotes, rodents, birds, and lizards eat the Joshua tree's fruit; an extinct herbivorous giant sloth was much better at spreading the seeds.

The desert is full of eccentric creatures—tarantulas, sidewinders, roadrunners, and antisocial human beings. Among trees, the true eccentric is the Joshua tree.

This giant yucca *(Yucca brevifolia)* has spiky tufts of leaves at the end of stiff, trunk-sized, shaggy stems. Imagine dracaena fronds growing out of a man in a grizzly suit. A nonconformist, the tree has no set growth pattern, no graceful symmetry. Some branches stick straight up; some grow at a sharp angle. Some of the trees are squat and bristly; some grow up to 70 feet.

The tree rises above the desert grasslands of the Mojave Desert of California, Nevada, Arizona, and Utah. It rivals the saguaro cactus as the iconic species in North American desert flora. It's a monocot, so you can't count rings, but we know it's slow growing and long-lived. At least one may have lived 1,000 years. A few have survived up to 500 years, many over a century. A 1932 article in the journal of the New York Botanical Garden describes a record Joshua tree that grew in the Antelope Valley (before the official refuge was established in 1936) 18 miles east of Lancaster, California. This tree was 80 feet high and nine feet in circumference, estimated to be 1,000 years old. There are photos, but in 1930 the tree was set on fire and destroyed.

Thousands were cut down in the late 19th century by settlers who came to plant orange groves and then gave up. The tree was seen as worthless and ugly; easterners were repelled by its witchy look. Mormon travelers, according to legend, found the tree suggestive of Joshua raising his arms to rally the Israelites, thus the name. Thousands more trees were uprooted in the 20th century to be replaced by heavy water users like alfalfa fields and vineyards.

For the past 75 years, a large number of these curious trees have been preserved inside the boundaries of Joshua Tree National Park. The 794,000-acre refuge has saved them from being replaced by crops or overrun by that giant amoeba we know as Los Angeles. (Malibu is only a three-hour drive west.) But the trees' survival is now threatened by a force that does not respect park barriers—climate change.

LASLOVARGA, TOP; STAN SHEBS, BOTTOM

The Joshua tree is adapted to live in one of the harshest places on earth; it can take hot and dry, but it turns out it can't take hotter and drier. According to a recent study *(Ecological Applications,* 2011) by a U.S. Geological Survey scientist, Kenneth L. Cole, over the next 60 to 90 years it will become too warm and dry for the tree to prosper inside the park that bears its name.

Cole's models predict that the tree's range outside the park (in southern Nevada, southwestern Utah, and western Arizona) is also likely to be reduced by as much as 90 percent before the end of this century.

The average high in the Mojave has risen just one degree Celsius in the past 40 years. This doesn't seem like a lot, but that shift is enough to move the tree's natural range a couple of hundred miles north. At the worst, Cole's climate model predicts

EXTINCT GROUND SLOTHS ARE NO LONGER AROUND TO SPREAD SEEDS FAR ENOUGH TO MIGRATE.

the tree is going to be nearly wiped out by the end of the 21st century. If current trends continue—and that may be one of the most-used phrases in writing on the environment—we're looking ahead to a world with twice the atmospheric carbon dioxide we have now. Heat leads to drought and fire: The worst Mojave desert droughts in 100 years of recorded history occurred in 2002 and 2007. Fires, rare until 1965, have increased.

Joshua trees, for all their supernatural appearance, cannot get up and walk into the mountains to cooler temperatures. (Their natural range includes elevations up to 6,000 feet, and the tree doesn't mind snow.) They have to depend on seed dispersers. (In the hotter portions of the Joshua tree range, successful seedlings are already rare.) Small rodents like the pack rat or desert squirrel can carry the seed 50 or so feet from the tree. A coyote or bird might eat a fruit and excrete seeds 10 miles away, but no modern animal is capable of helping the tree migrate long distances. Here we come to the feces of the giant sloth *(Nothroptheriops shastensis),* which through its diet choices gives us evidence of what plants grew millions of years ago.

Before its extinction around 13,000 years ago, we know from fiber, fruit, and whole seeds found in dung in a Nevada cave that the Shasta ground sloth ate the fruit of Joshua trees. Slow moving though they probably were, they were large and dispersed the seeds over large areas. Now the trees have the distinct disadvantage of being dependent on an animal that's not coming back.

What will Joshua Tree National Park look like minus most of its Joshua trees? The granite monoliths will still be there, and there will be a lot of creosote and other low-level plants like sage. The slim good news is that, according to Cameron Barrows, a research ecologist at the Center for Conservation Biology at the University of California at Riverside, small pockets of trees will persist within the park, finding refuge in the higher-elevation valleys and cooler canyons. Seedlings there are doing better, but even there the landscape will be different: Pinyon pines will be gone, killed off by the pine bark beetle, no longer limited by cold winters.

When, and if, the suitable habitat for the Joshua tree is reduced to only 10 percent of its current range, the animal and insect life dependent on it will be much reduced. The insects in the tree support three species of bat; 25 bird species nest in the tree. The tree is pollinated by a single species of moth *(Tegeticula synthetica).* (Every species of yucca amazingly has its own moth.) The desert night lizard that hides in Joshua tree leaf litter during the day will have to find another place to get out of the sun. ●

COURTESY CHICAGO BOTANIC GARDEN



PHLOX TRIUMPHANT

Plain old phlox can look out of date in this design moment when windblown grasses, stark seed heads, and spiky succulents are in vogue. Even home gardeners and designers who still love the plant for its fragrance and long bloom time have been discouraged by the mildew that afflicts many phlox species when the days turn hot and the nights humid. Lots of the tall, prominent plants are disfigured with white blotches on just those late summer evenings when the garden is where you want to be.

This past year has seen two good omens for phlox. The first is a lively and literate book celebrating the species; the second is a very useful evaluation of specific cultivars, including one that tests as virtually mildew proof.

The book, by James H. Locklear, former director of the Dyck Arboretum of the Plains in Kansas and of the Nebraska Statewide Arboretum, shows a patriotic enthusiasm for the plants. They're all North American, except for one Siberian outlier. His *Phlox: A Natural History and Gardener's Guide* begins by describing how our native plant was discovered and then coveted in the 18th and 19th centuries by European plant collectors, even the czar of Russia. A drive through the suburbs of any English city shows how phlox love ↘

persists. You see very few front yards that don't have creeping phlox *(Phlox stolonifera),* whose origins in Appalachian shale barrens make it the perfect plant to drape over stone walls. Toward the end of the 19th century, phlox of all kinds, selected for a wide range of flower colors, came back across the Atlantic.

Locklear's book, the result of 10 years of research and travel, profiles all the currently recognized species, in each case giving not only the plant's natural history but also its cultural history—how it has been cultivated, selected, and used.

It's the species known as fall phlox *(Phlox paniculata)* that dominates the nursery trade. For years people have been told to foil mildew by avoiding overhead watering and thinning stems to improve circulation. The best strategy, though, is to select plants that make it through a hot summer without succumbing to the dread fungal disease.



ABOVE
The new cultivar 'Shortwood,' a champion at fending off mildew and mites, is a very, very bright pink.

That was the quest of the Chicago Botanic Garden trials. The trials are a sort of *Consumer Reports* for cultivars of popular perennials. Evaluating plant products takes a lot more time and a lot more space than grading cars or dishwashers. This one took nine years of growing 78 varieties of garden phlox. The cultivars were rated for size and number of blooms, strength of stems, and general plant health. The trials of course demonstrate how the plants do in Chicago—Zone 5, no fertilizer, just a weed-suppressing mulch of shredded leaves and wood chips—but apply to many other parts of the United States.

One cultivar stood out. It's called 'Shortwood,' a chance cross of 'David' and some mystery bride that popped up in the Pennsylvania fields of nurseryman Sinclair Adam Jr. He named it for the garden of his friend Stephanie Cohen, coauthor of *The Perennial Gardener's Design Primer.*

Of the plants in the trial, 27 got high ratings for flower production, good health, and strong stems, but only 'Shortwood' received five stars for its exceptional overall performance and superior resistance to powdery mildew and spider mites. It didn't get mildew even when surrounded by infected plants. (The full list can be found at *www.chicagobotanic.org/downloads/planteval_notes/no35_phloxpaniculata.pdf.)*



ABOVE
Phlox leaves are infected by the dread powdery mildew, bane of the justly popular summer perennial.

Richard Hawke, plant evaluation manager at the Chicago Botanic Garden, admits "the color is a little sharp, and it's large, not short." The strong pink of 'Shortwood' is reminiscent of the hue of the first 'Knock Out' rose, which didn't blend well with other colors. An even newer cultivar, 'Blushing Shortwood,' is a gentler pink.

Hawke, who's been running trials for 30 years, beginning at the University of Wisconsin, Madison, before moving on to Chicago, is a man with a mission. "The marketers are running the show," Hawke says. "They push what's new and what's hot." He believes consumers are coming to see the advertising as untrustworthy and the unproven new plants as too expensive.

The cultivar 'David,' for example, has long been promoted in catalogs and at garden centers as the most mildew-resistant phlox. Its offspring has surpassed it.

The Chicago phlox trial beds are dismantled; other perennials are being tested including *Coreopsis, Stokesia, Buddleja,* and *Veronica*. The phlox that scored high goes into the botanic garden's display areas. The others were part of a big giveaway to volunteers, staff, and community gardens. Summers to come will see plenty of phlox blooming all over Chicago. ●

CONSTANCE CASEY IS A FORMER NEW YORK CITY PARKS DEPARTMENT GARDENER AND A CONTRIBUTING EDITOR FOR *LAM.*

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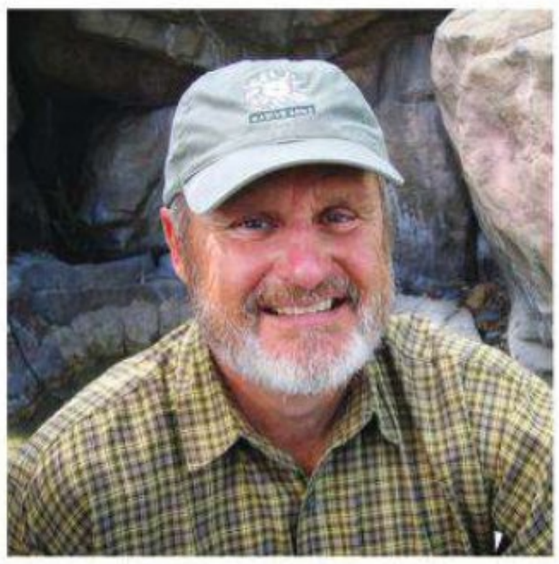
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NATIVE SON



A VETERAN OF THE GRASS REVOLUTION TALKS ABOUT NATIVE PLANTS AND THE DESIGNED LANDSCAPES OF CALIFORNIA.

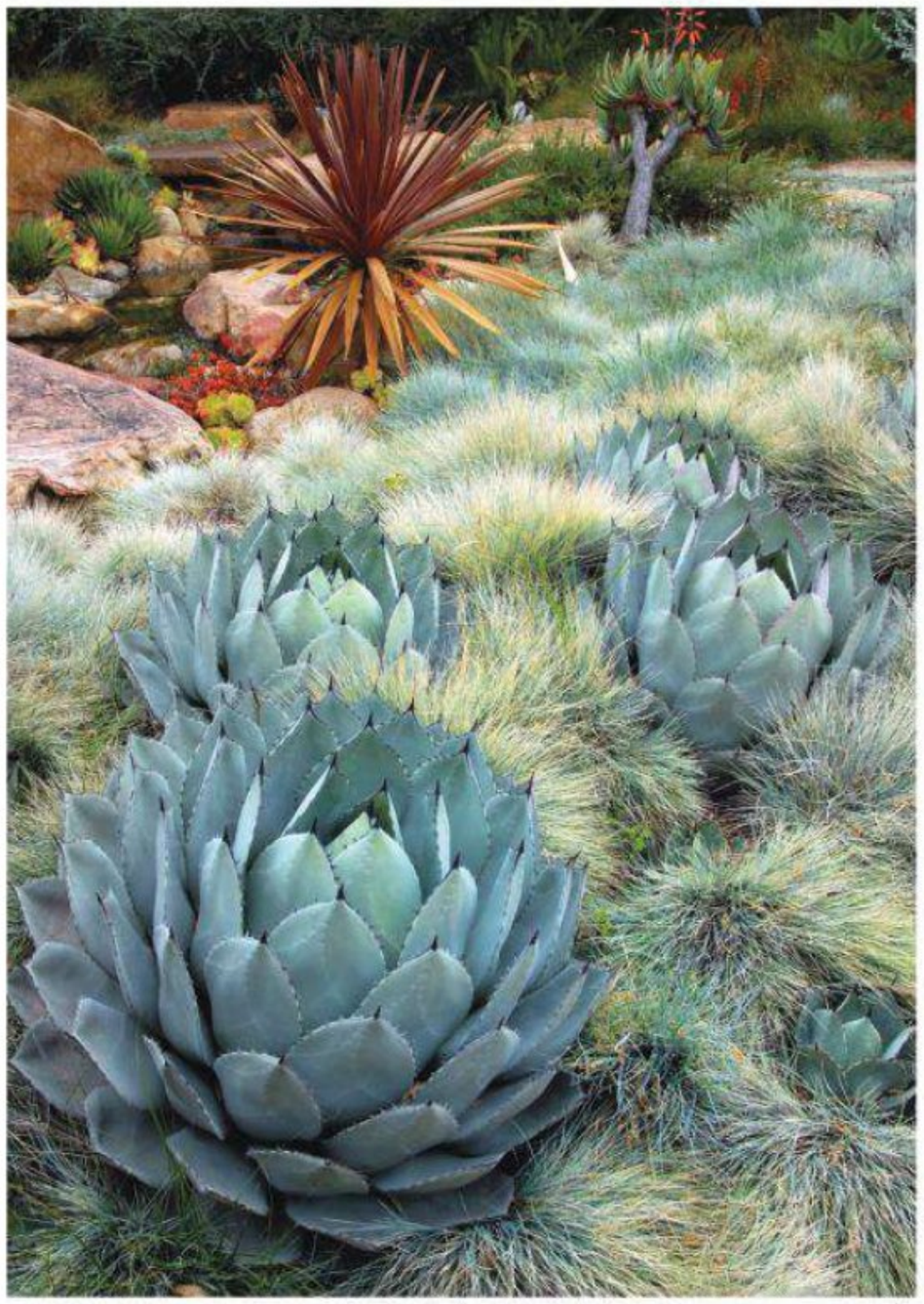
BY JOANNE FURIO

In 1976 and 1977, when California was suffering from a drought so severe it is now sometimes prefaced by the words "The Great," David Fross was a graduate student in agriculture at California Polytechnic State University and working part-time at a retail nursery. To cope with the drought, native plants were being heavily promoted, yet only three to four nurseries in California carried a meager assortment. Nurseries literally couldn't grow the plants fast enough. Fross saw the demand and founded his pioneering wholesale nursery, Native Sons, on eight acres in Arroyo Grande, California, in 1978. The nursery represented not only an entrepreneurial opportunity, but also a way to support a cause he rallies for to this day: water conservation.

As a pioneer in the promotion and use of native plants, Fross has watched their popularity grow from emergency stand-ins to widely used staples that have been embraced by the landscape architecture community. Over the past three decades, he has also witnessed how designs have changed, moving from a monoculture look to more daring combinations incorporating native grasses with perennials and succulents.

Fross promotes such combinations in his second book coauthored with Carol Bornstein and Bart O'Brien: *Reimagining the California Law: Water-conserving Plants, Practices, and Designs* (Cachuma Press). The trio also wrote the regionally popular *California Native Plants for the Garden,* which Cachuma published in 2006. Fross has additionally been spreading the word about natives to landscape architecture students at Cal Poly, where he has been teaching a native plants class for 12 of his 22 years there.

Fross discussed the past and future of native plants following a talk on lawn replacements at Flora Grubb Nursery in San Francisco.



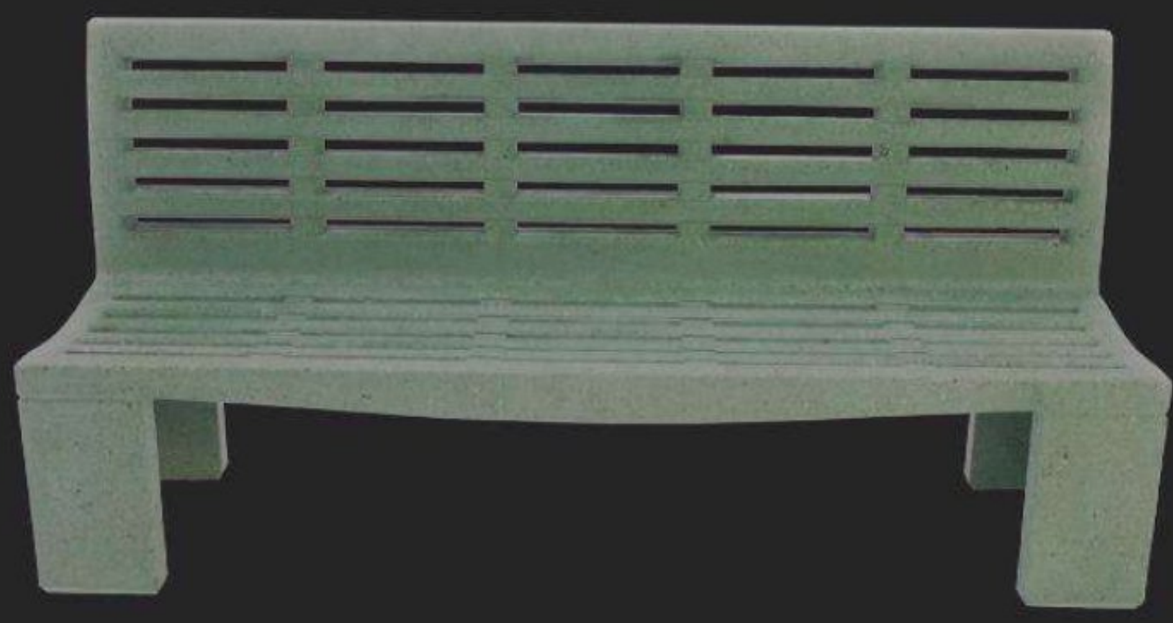
ABOVE
This lawn alternative in the Santa Barbara foothills, designed by Arcadia Studio, includes artichoke agave and blue fescue.

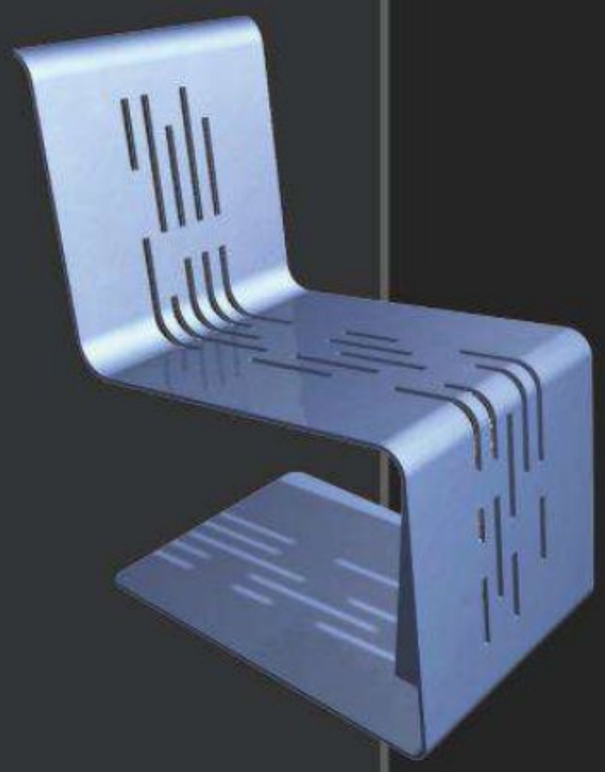
COURTESY NATIVE SONS NURSERY, TOP; JOHN EVARTS, BOTTOM

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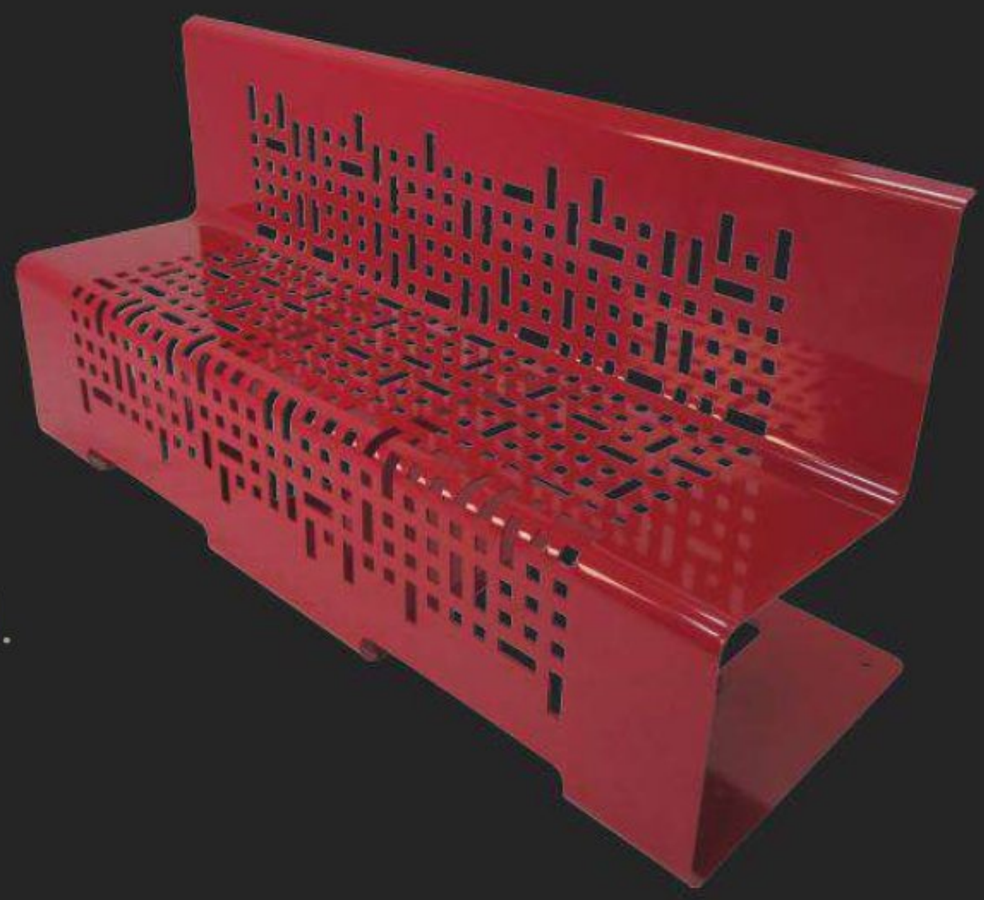
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ABOVE
A coastal Santa Barbara garden of blue moor grass, blue fescue, and blue oat grass paired with succulents was designed by landscape architect Jack Miles Kiesel of Ventura.

ALL PLANTS REQUIRE REGULAR, INFORMED MAINTENANCE, EVEN NATIVES.

You grew up in Southern California as a lawn lover who "watered, mowed, and fertilized" the family lawn for 12 years. How did you end up doing a complete 180?

I was inspired by John Wesley Powell and eventually became a guide and lover of the Colorado River. In college I read his iconic *Report on the Lands of the Arid Region of the United States*. At the time, Powell was predicting that there wasn't enough water to support the culture. That was in 1870.

But they're calling this year "a fat year" in California in terms of water.

This year the Sierra snowpack is 165 percent of normal. When people talk about water here I like to quote John Steinbeck in *East of Eden:* "During the dry years the people forgot about the rich years, and during the wet years they lost all memory of the dry years."

As you know, many landscape architects continue to install lawns in certain situations.

I'm not saying there's not a place for lawns. Certainly when there are children, they're appropriate—and [San Francisco Giants pitcher] Tim Lincecum needs to be able to have a lawn. Lawns are great in urban parks. I'm talking about the endless lawns of suburbia—there's just no imagination there. We're trying to be a catalyst and suggest some alternatives.

Was there a downside in the 1970s rush to go native?

There was a bit of backlash after some natives were misused. For example, people embraced *Fremontodendron* for their drought tolerance and then treated them like a traditional garden shrub, watering them in the summer. But these plants are notoriously sensitive to summer water, so they died.

As a wholesaler, you get to see design trends in their infancy. How are landscape architects using natives differently today?

The first phase of the native revolution was monoculture. It's evolved into more mixing, with perennials and succulents, which can be just as sustainable and last just as long.

Is there a drawback to planting an all-native garden?

For landscape architects, you're trying to sell a look that is going to change over time. Most people want to be barbecuing in the backyard and want the garden to look good in July. But with our Mediterranean climate in California some plants—like *Artemisia californica,* California sage—really want to go to sleep in July. So there's a built-in conflict.

How can a landscape architect address that?

You really have to know the subtleties of what that plant does seasonally.

You teach a required class in the landscape architecture curriculum on California plant communities and plants. How do your students learn about such subtleties?

I spend a lot of time trudging them up hills and through the forest and chaparral and coastal shrub, making them see what these plants look like in their native context so they can take their art form from that. That informs how you use them.

If you had your way with the landscape architecture curriculum, what would you do?

Have students spend a quarter of their time doing maintenance so they will think about what they're designing. It's very easy to run up a maintenance bill with a poorly thought-out design.

Natives are often sold with the idea that they're low or no maintenance.

I disagree with that fundamentally. Any group of plants you use is going to require regular informed maintenance, and I underline the word 'informed'—you have to know your plants.

When you add succulents to the mix, does that reduce maintenance?

No, it changes it. You have to watch your watering. In a garden mixing, say, agaves and fescues, the fescues need more water than agaves.

JOHN EVARTS

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FROSS'S TOP 5

HE'S KNOWN FOR BEING A GRASS MAN, BUT DAVID FROSS ALSO LIKES THESE LOW-WATER Ssucculents TO MIX WITH NATIVE PLANTS AND PERENNIALS.



1 ***Dudleya pulverulenta* and *D. brittonii* (shown):** With striking silver-white foliage and large rosettes, they're useful in both containers and rock walls.



2 ***Dudleya virens* ssp. *hassei*:** This ground cover dudleya with densely clustered rosettes can be used in dry shade under deciduous oaks.



3 ***Agave deserti*:** This heat-loving agave will tolerate extremely dry sites. Its chalky blue-gray leaves create a handsome vertical form.



4 ***Graptopetalum paraguayense*:** A chameleon-like succulent that forms tight, low mounds with silver-blue to pink foliage, depending on exposure.



5 ***Sedum*:** *Sedum nussbaumerianum* has a copper-red blush to the foliage; *Sedum spathulifolium* 'Cape Blanco' has appealing chalky-gray foliage; and *Sedum dasyphyllum* (shown) has a tight mat-forming habit and downy gray foliage.

Maintenance would also be a little more challenging: At some point you have to clean up the fescues without damaging the agaves.

What can landscape architects learn from plantsmen?

Those of us in the plant world consider a significantly larger palette of plants. Landscape architects and designers tend to use plants that work, that aren't trouble, that have a certain plasticity. You can plant them in San Francisco, San Diego, and Pasadena. So landscape architects tend to use a more generic palette.

Tell me the plants that have been overused in California.

Agapanthus, Rhaphiolepis, and *Xylosma*.

How has plant selection changed over the years?

I couldn't sell something like *Muhlenbergia rigens* 25 years ago. Now landscape architects at Caltrans are using it along the edges of freeways. I just saw it massed in front of a grammar school in San Francisco. That's a phenomenal change in a relatively short period of time. Landscape architects have embraced the grass revolution.

The number-one native that you sell is:

Carex praegracilis—clustered field sedge.

Other popular natives?

Ceanothus griseus 'Yankee Point' and *Fremontodendron* are basics now. The range of natives being used has broadened significantly, with plants like buckwheats and native *Salvias*.

I've increasingly seen succulents used in planters outside San Francisco office buildings, in backyards, and all over Los Angeles. Why are they suddenly everywhere?

Part of it is about fashion. In the past five years they've gained enormous popularity. But also, in our climate, it has to do with concerns about water.

As someone who promotes regionalism, is there anything you *don't* like about succulents?

They do take away some of the seasonality in the garden, and I'm really fond of seasonality. People say there's no fall color here. People, look to the hills. There's a lot of change; it's just different from the Eastern paradigm.

What is the landscape architect's role in water conservation?

They are the professionals, the top of the pyramid when it comes to landscape design. It's their responsibility to show us the way. ●

JOANNE FURIO IS A BAY AREA WRITER WHO SPECIALIZES IN DESIGN, GARDENING, AND ARCHITECTURE. HER WORK HAS APPEARED IN THE *NEW YORK TIMES*, *DWELL*, AND *SAN FRANCISCO MAGAZINE*, WHERE SHE'S A CONTRIBUTING WRITER.

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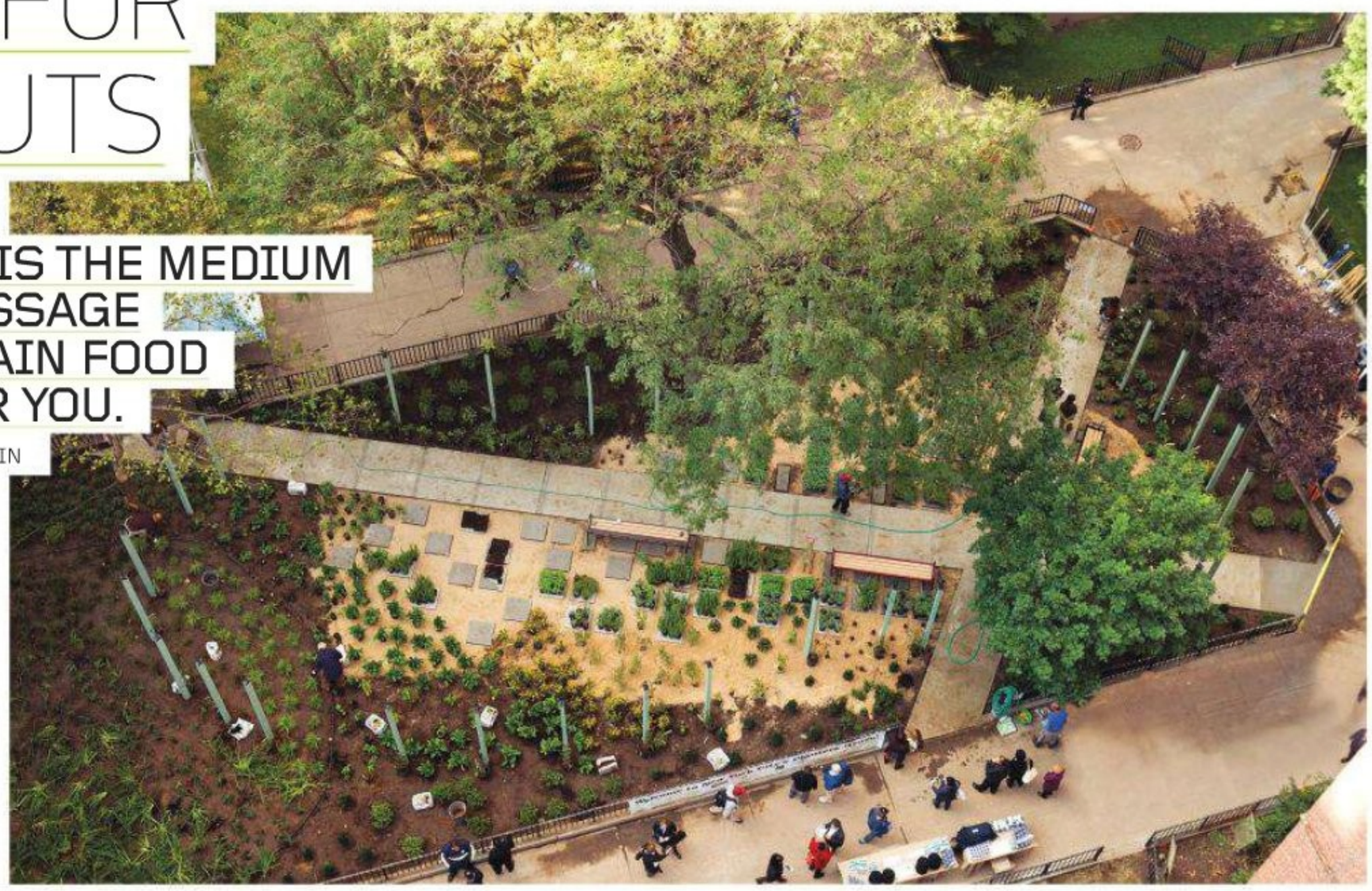
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BY FRANK EDGERTON MARTIN



TOP
From above, the grove's string of blue posts and finials outlines a 100-foot-long peanut shape and interior herb gardens.

In the early 20th century, a young Italian immigrant sold roasted nuts from a cart and began promoting himself as "the Peanut Specialist." By 1916, Amedeo Obici's company had grown into one of the nation's largest peanut packagers. Keeping up with modern branding, it invented "Mr. Peanut"—a monocled gentleman with spats and a cane who happened to have a peanut for a body.

More than a century after Obici came to New York, the Lower East Side is now one of the hippest neighborhoods in the world, and the company, Planters, is a small piece of Kraft Foods, the largest packaged food producer in the United States. The dapper Mr. Peanut lives on as part of the Planters Nuts identity and current marketing slogan: "Naturally Remarkable." It is here, at the fashionable conjunction of nature and healthy eating, that landscape architecture enters the story. Mr. Peanut—or at least his shape—also lives on in the design of the Planters Groves—three new gardens created by Ken Smith Landscape Architect (KSLA) in New Orleans; Washington, D.C.; and at the Lillian Wald Houses on Manhattan's Lower East Side.

One of the reasons that the New York Planters Grove is so successful is that its very location is a piece of urban archaeology—an intersection between the 19th-century tenement city and postwar urban renewal. Built along Avenue D between East Houston and 6th Street, the Wald Houses are now historic in themselves—a legacy of Le Corbusier's Radiant City ideals with 16 tan brick buildings that hold nearly 2,000 apartments. As Ken Smith, ASLA, argues, their orientation to the city grid helps to tie them into the surrounding 19th-century neighborhood.

Known as Alphabet City, Avenues A, B, C, and D were, for much of the past 40 years, considered quite dangerous rather than a place to study history. But today, thanks to New York's continuing reinvention, young new inhabitants are transforming the area. At night, the neighborhood buzzes, and in the mornings, a quiet world of iron balconies, small community gardens, and murals unfolds as a respite from downtown's pace and noise.

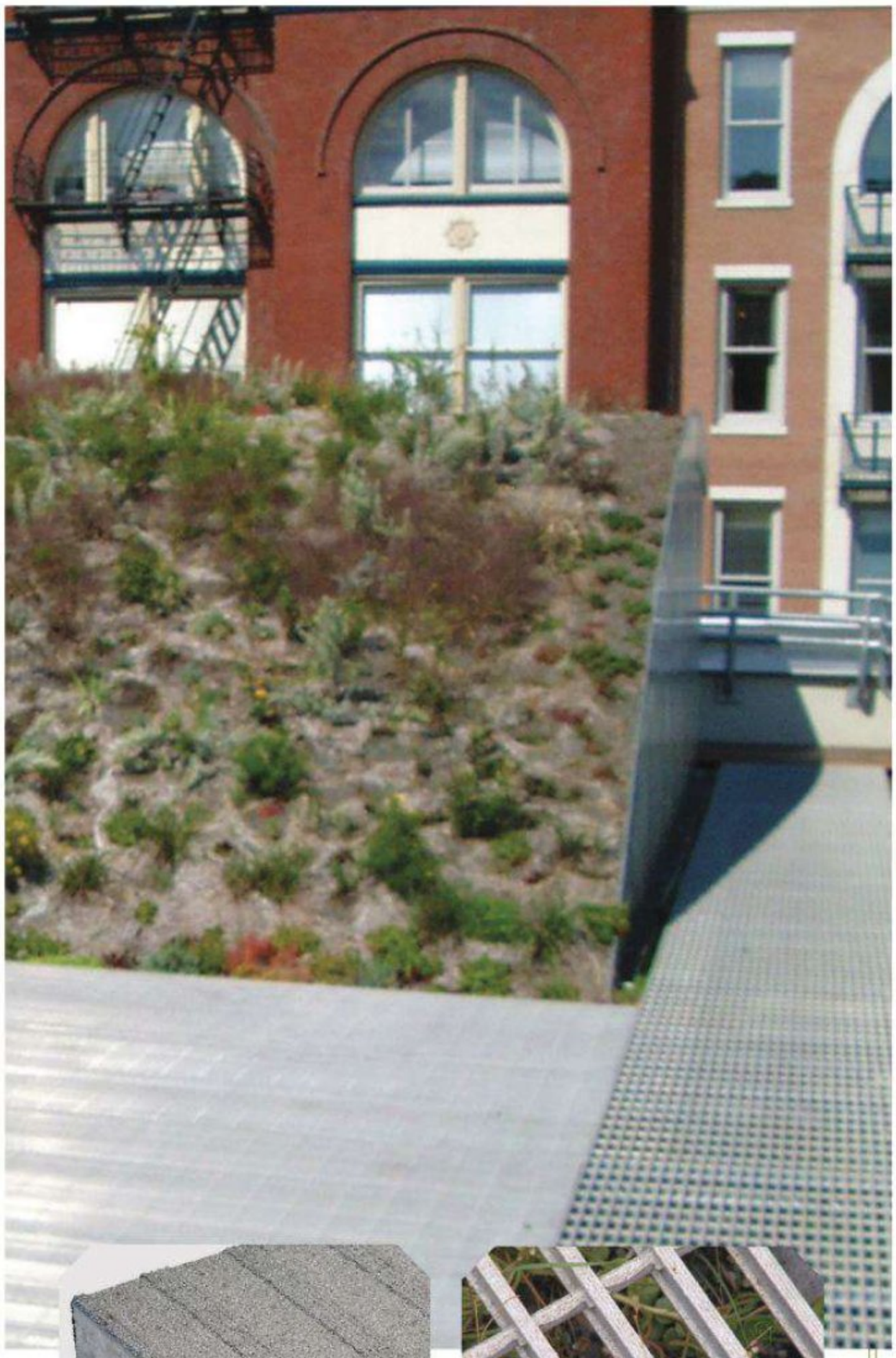
Sixty years after opening as homes for military families, the Lillian Wald Houses still offer affordability in a city known for gentrification and stratospheric rents. As public housing in

AVI GERVER, TOP; CHARLES STECK, PEANUT IMAGES THROUGHOUT

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an emerging arts neighborhood, the Wald Houses are an ideal New York venue for the Planters Grove program. Ages and ethnicities range greatly in the neighborhood, and the Wald House residents are active in the management of their property.

With some help from the New York City Housing Authority, KSLA and its partner, Green City Force, took part in several neighborhood forums where residents discussed the location, activities, and upkeep of the new garden. Originally, the designers had targeted a courtyard (or "lozenge," as the designers and residents call them) facing Avenue D just to the south. They moved one lozenge north because residents thought that this area needed more work and also because it was next to the Wald Houses' central office.

This shift proved fortuitous because the space is shaded by a canopy of 40-foot-high locusts, London plane trees, and oaks that were likely planted in the 1950s. As we walked through the garden, Frank Barbour of KSLA told me that during construction last summer, the crews found that the site soils were only a thin veneer covering massive layers of crushed brick, steel, and concrete, most likely from the 19th-century buildings demolished to build the Wald Houses. "It's amazing how the trees grew to this size, given all the fill on this site," he added. The vitality of the existing trees bodes well for KSLA's urban palette of ground covers, shrubs, and perennials.

When he began the Planter's Grove gardens in 2010, Smith developed prototype elements that would appear in each of the urban locations. "The peanut-shaped enclosure is a key feature," he says. This core space, outlined at the Wald Houses with a string of vine-covered four-by-six posts, serves as the central gathering area. In all of the Plant-

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1 **RENDERING**
KSLA's rendering shows the peanut form, the diagonal crossing paths, and, to the left, the Shade Garden near Avenue D.

2 **OPENING DAY**
On opening day in late 2011, Mr. Peanut showed up to greet visitors.

3 **WOODEN WALKWAY**
A wooden walkway crosses over the rainwater garden.

4 **VOLUNTEERS**
Job Corps and its New York partner Green City Force organized and trained volunteers to plant and maintain the grove over time.

BEYOND A BRIEF VISIT ON OPENING DAY BY MR. PEANUT, THE GARDEN DOES NOT BOMBARD VISITORS WITH IMAGES OF THE PLANTERS BRAND.

ers Groves, this central area is surrounded by more passive space that includes a rain garden and "bog" to interpret the water cycle for visitors. All of the groves also have places where neighbors can grow herbs.

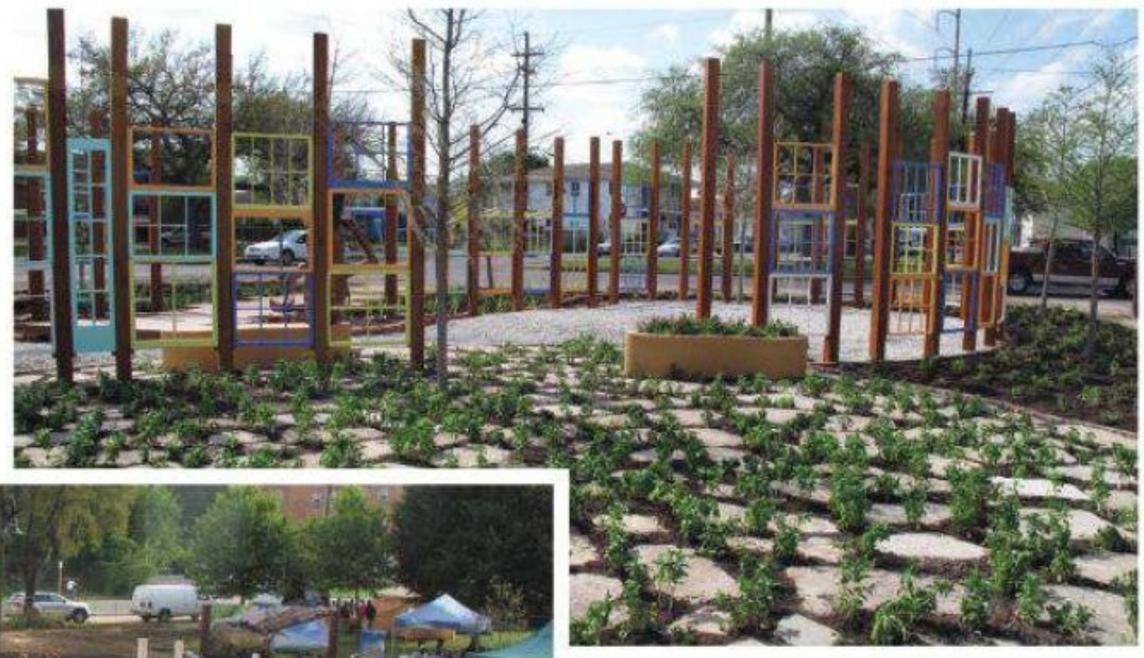
Besides subtle references to the peanut form, each of the groves evokes the architectural legacy of its location. In New Orleans, KSLA reused old window frames from houses destroyed by Hurricane Katrina as part of a colorful frame around the central peanut shape. In Washington, D.C., where Smith observed "a real porch culture," they used old porch columns as a tool for outlining the peanut form. Around Avenue D, the old tenement buildings have wrought iron front stoops and window railings recalling vines or flowers. At the Lillian Wald Houses, KSLA evokes these ironworks as finials set atop the wooden posts outlining the 2,300-square-foot main peanut form.

In plan view, this 100-foot-long peanut shape defines the garden and is clearly visible, intersected by two diagonal sidewalks where visitors can sit on benches or tend to the rosemary, sage, mint, and other hardy herbs planted amid stepping-stones. Next to Avenue D, the grove's Shade Garden includes two half-peanut-shaped beds filled with such hardy varieties as *Astilbe,* Solomon's seal, and wild geranium. Just to the east of the main peanut enclosure lies the garden's softest and most unusual feature: the bog and rainwater garden. Also set on a diagonal, a wooden bridge of eight-foot-long boards, staggered in groups of five, carries visitors over the bog. Looking down into the swale designed to collect the site's rainwater, groupings of sedge grasses, Slender Blue and Blue Flag iris, common rush, and several varieties of ferns are visible—not the sort of plantings one encounters often in Manhattan.

The Planters Groves concept, developed with the help of the public relations agency Edelman, is a sophisticated effort to burnish the image of an old brand with positive social and environmental connotations. The groves' construction work offered job-building skills through a partnership with a community service organization, the Corps Network. Thanks to free media coverage of each garden opening, not least in the *New York Times,* there is a significant "echo effect" that reminds people of old Mr. Peanut and the idea that nuts



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THE PLANTERS GROVES BALANCE PUBLIC NEEDS AND CORPORATE DONOR INTERESTS.



TOP
For the New Orleans Planters Grove, KSLA recycled windows from houses destroyed by Hurricane Katrina to outline the peanut form.

BOTTOM
Ken Smith observed a "real porch culture" in Washington, D.C., that he expressed in the D.C. Planters Grove through a peanut outline of porch columns.

are part of a healthy diet. These benefits easily offset Planters' financial contribution to building the groves, whose relatively modest construction cost partially reflects the contributed labor of the Corps Network through its New York branch, Green City Force. Over time, Green City Force will continue maintenance of the garden at Wald Houses.

Despite their social and aesthetic benefits, such corporate sponsorship of public spaces opens larger questions that landscape architects should consider. Where is the tipping point between constructive private–public partnerships like the Planters Groves and the overt "branding" of public space? How can landscape architects help clients and corporate sponsors to convey corporate messaging without becoming overly commercial? Part of the answer may lie in the subtleties of form making and symbolism evident in the Washington and New York Planters Groves. The iconic peanut is there, but more so when viewed from above or in site plan—a way of seeing space more familiar to designers than to people generally, who are free to enjoy the space without being bombarded by the brand.

Another question should be whether future public access is protected regardless of funding source. When public spaces are given private names (think big-league sporting venues and amenities in city parks), is there a danger that public protests and demonstrations nearby might be limited for fear of negative connotations? For example, New York's Zuccotti Park—currently the site of the original Occupy Wall Street encampment, is a point of contention. Although privately owned, Zuccotti is, in theory, open to the public as the result of a developer agreement with the city. As of this writing, the protesters can still inhabit the park during the day, but their right to assembly ends at nightfall when they must leave. Similarly, M. Paul Friedberg's soon to be demolished design for Peavey Plaza in Minneapolis is also a site of Occupy Wall Street protests. But, with its potential transformation into a more controlled space for music performances, and with heavy corporate sponsorship for the redo, might things change?

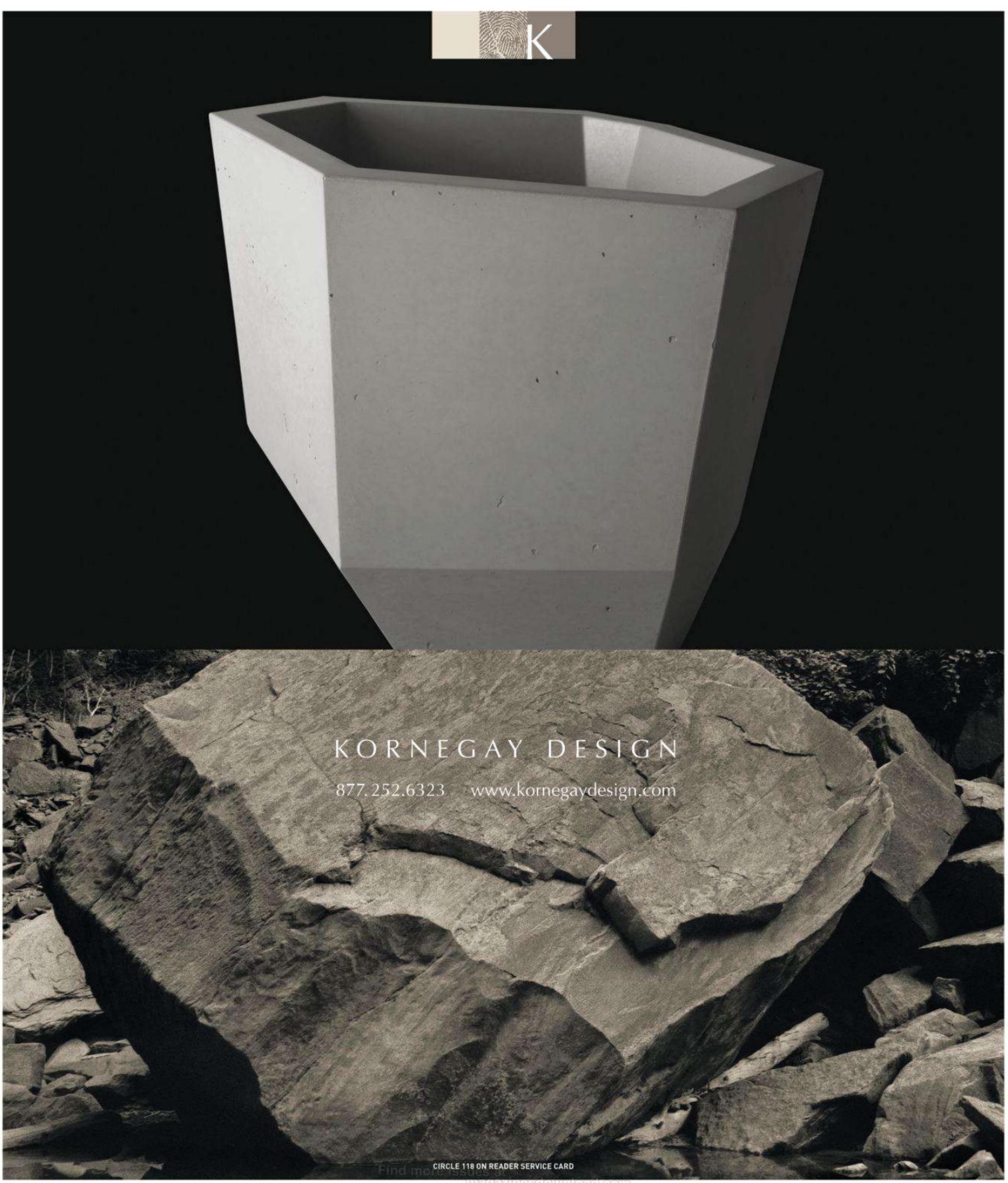
As works of landscape architecture, the Planters Groves may be most significant because they forge a sensible balance between public needs and corporate donor interests. They are genuine attempts to involve and reflect local communities, to build teaching landscapes meant to be used and not just seen, while also evoking a venerable product with whimsy. Today, the Mr. Peanut figurines from over the decades are very collectible, and some are even valuable. Perhaps the growing collection of Planters Groves, like the well-dressed Mr. Peanut himself, will prove equally enduring. ●

FRANK EDGERTON MARTIN IS A LANDSCAPE HISTORIAN, CAMPUS PLANNER, AND REGULAR CONTRIBUTOR TO *LAM*.

Project Credits

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STAKING NEWLY PLANTED TREES DOESN'T ALWAYS DO THEM A FAVOR.

BY JAMES R. URBAN, FASLA

Many years ago, Henry Arnold, FASLA, described to me a row of trees near his office that all broke at the same place in a strong wind. He stopped to investigate the unusual occurrence and found the guy wires used to stake the tree embedded in the trunk of each tree at the point where they snapped off.

It's a familiar sight—a tree planted three or four years ago, still staked in place. The ties meant to keep the tree growing straight have deformed it—maybe even strangled it.

But despite the potential for catastrophic failure, most tree planting specifications automatically require contractors to stabilize newly planted trees. This may be done with traditional stakes, guy wires, or underground systems that anchor the root ball. Landscape architects will often try to design staking systems that are more secure or less visible. But we are not giving enough thought to how these systems affect the trees, the benefits of stabilizing a tree, and the potential consequences.

There is a variety of scientific research on this subject. A recent study by Kendra Labrosse and her team at the University of Guelph, published in *Arboriculture & Urban Forestry,* lists nearly 20 useful references. Over the years, studies have yielded some conflicting results, but there seems to be a consensus that stabilization may help in certain situations. But it can also harm a tree—and the negative effects become greater the longer the stabilization system remains in place.

The Case for Stabilizing Trees

Some research has suggested that stabilizing a tree helps it to recover from the shock of being transplanted. The Labrosse paper, published in 2011, examined 488 trees in Guelph, Ontario. "In most cases, it was found that [tree stabilization systems] were associated with improved health during a short period (1–3 years) after transplant," notes the study. The researchers found that trees with stabilization systems showed fewer symptoms of poor health owing to pests and diseases and were less likely to suffer from stunted growth than trees that did not use support systems or where the support systems had been removed.

These results are similar to those of a study of red maples by Virginia Tech's Bonnie Appleton published in the Southern Nursery Association 2006 Research Conference Proceedings. She found that stabilized trees measured 30 inches above the ground increased one to three millimeters in trunk diameter more than unstabilized trees when compared after one growing season. The traditional system of two stakes connected to the tree showed the greatest increase over other approaches tested, while the majority of the trees with belowground stabilization systems grew less than the unstabilized control.

Probably the most common argument in favor of stabilization is that when you put trees with disturbed root systems in an area with high winds, they may rock out of position if they are not stabilized. When field-grown trees are transplanted, they lose most of their supporting roots. Container-grown trees can be unstable, particularly if grown in a bark potting medium. Bark potting medium is lighter than soil, so the trees have less mass to counter the force of the wind. The potential for root ball movement under wind load is increased when there are soft or saturated soils within or around the root ball. And the soil around newly transplanted trees is often heavily saturated from frequent watering. Conversations with people and my own observations over the years have led me to believe that trees with poor-quality root balls that are loose or undersized, most container trees, and some bare-root trees may benefit from stabilization.

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BELOW
Cables left in place for four years cause severe damage. The tree is sprouting below the guy wires in an effort to survive.



The Case Against Stabilizing Trees

But stabilization systems may not always make sense. Researchers including Appleton; Larry Costello at the University of California, Davis; and Gary Johnson at the University of Minnesota have found that the advantages of stabilizing a well-grown and harvested or field-grown tree are countered by some significant disadvantages.

The worst damage occurs when stabilization systems are left on too long or never removed, which happens more often than one might hope. Ties and wires can cause abrasions to the bark or trunk girdling. Even wires covered with rubber hoses can slip into positions where tree bark damage occurs.

Below-grade stabilization systems can be even worse than aboveground systems, as they are hidden from view and damage may not be observed until it is too late to save the tree. Below-grade systems are often designed such that the wires form a loop around the trunk that will eventually cut into the tops of critical support roots or girdle the trunk if it is not removed.

Damage from stabilization systems that aren't removed properly is common and has been observed in all areas of the country and in projects of all scales and complexity. For example, in her study, Labrosse observed significantly more girdled trunks, swelling, and wilting among stabilized trees within Guelph—particularly in projects without good follow-up maintenance. Appleton's 2006 study showed that by the second growing season, trees that had the stabilization left in place were beginning to show signs of damage.

Another argument against stabilization is that stabilized trees may, ironically, be less resilient when faced with high winds once the system is removed. In a 1984 article in the *Journal of Environmental Horticulture,* Richard W. Harris relays the story of a large landscape in Davis, California, where nearly all the sycamores that were staked were blown down during a storm, and all those that weren't staked survived.

Tree trunks are naturally tapered; they add more wood at their base in response to the forces of wind and gravity on the tree. This additional wood is critical to tree stability. Harris, in his book *Arboriculture,* summarizes his many research projects on stabilization that have shown stabilized trees do not develop as large a trunk taper as trees that are not stabilized. He recommends only limited stabilization that, when applied, should be lower to the base of the tree to allow the canopy to move in the wind, which promotes faster trunk growth.

And that isn't the only way that stabilization may affect a tree's ability to withstand wind. Andrew Leiser and colleagues' 1968 study, "A theoretical analysis of a critical height of staking landscape trees," found stabilized trees grew larger canopies than trees that were not stabilized, making them potentially more susceptible to wind throw after stabilization is removed.

While trees that are not stabilized are rarely observed to suffer declines directly related to lack of support, trees are frequently severely damaged or even killed by the stabilization treatments. That's why a few landscape architects, including me, Joe Karr, FASLA, and Jacobs/Ryan in Chicago, stopped stabilizing trees in the mid-1990s.

Since then, I've observed very few of these trees ever move out of alignment after planting. Many researchers have come to the same conclusion. A 2009 study by Alexis Alvey and others in *Arboriculture & Urban Forestry* tested a number of conventional tree stabilization systems on field-grown, balled and burlapped white ash and found that "even nonstabilized ash trees were tolerant of moderate to heavy wind loads." The greatest change observed in a tree's orientation was four degrees, "which was visually imperceptible," the authors said. More dramatic, Appleton and Beatty looked at Bradford pears that weathered a Category 2 hurricane just six months after they were planted. They observed no differences in trunk orientation among trees that were stabilized and trees that were not.

The majority of researchers and urban foresters who have written about stabilization recommend not stabilizing trees unless there is a good reason to do so. A well-grown, harvested, and planted balled and burlapped tree almost never needs to be stabilized.

Landscape architects can modify their specifications and details so only trees that need to be stabilized are. The planting standards of many regional contractor associations require stabilization, as do most institutional master specifications, but this does not mean that these standards must be followed. Modifications to industry standards are recommended all the time as conditions and the findings of research indicate a different practice. Industry standards usually lag behind best practices, and landscape architects, as the profession in charge of specifications for projects, must be the leaders in making changes when research indicates ↘

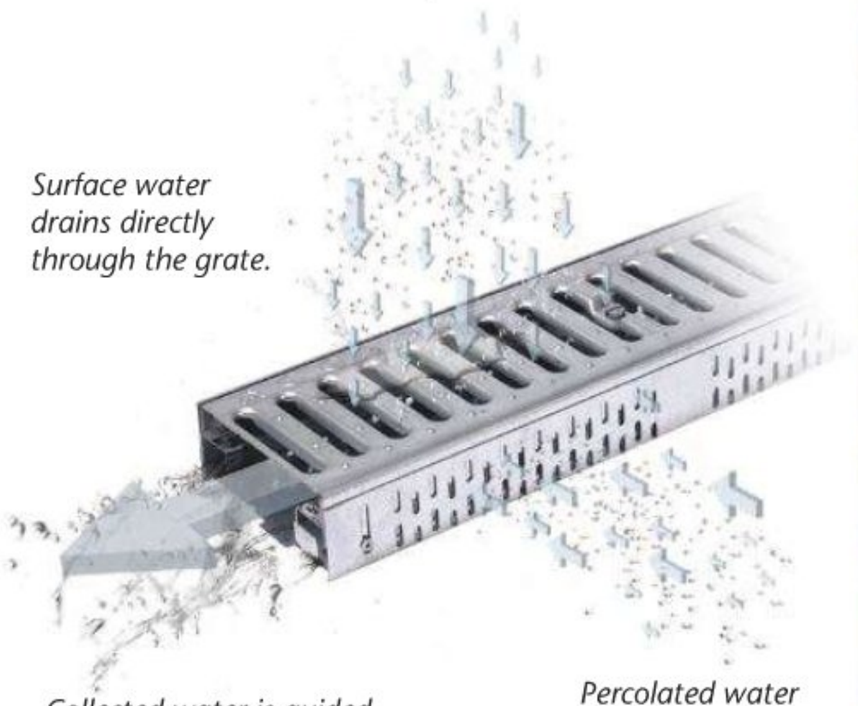
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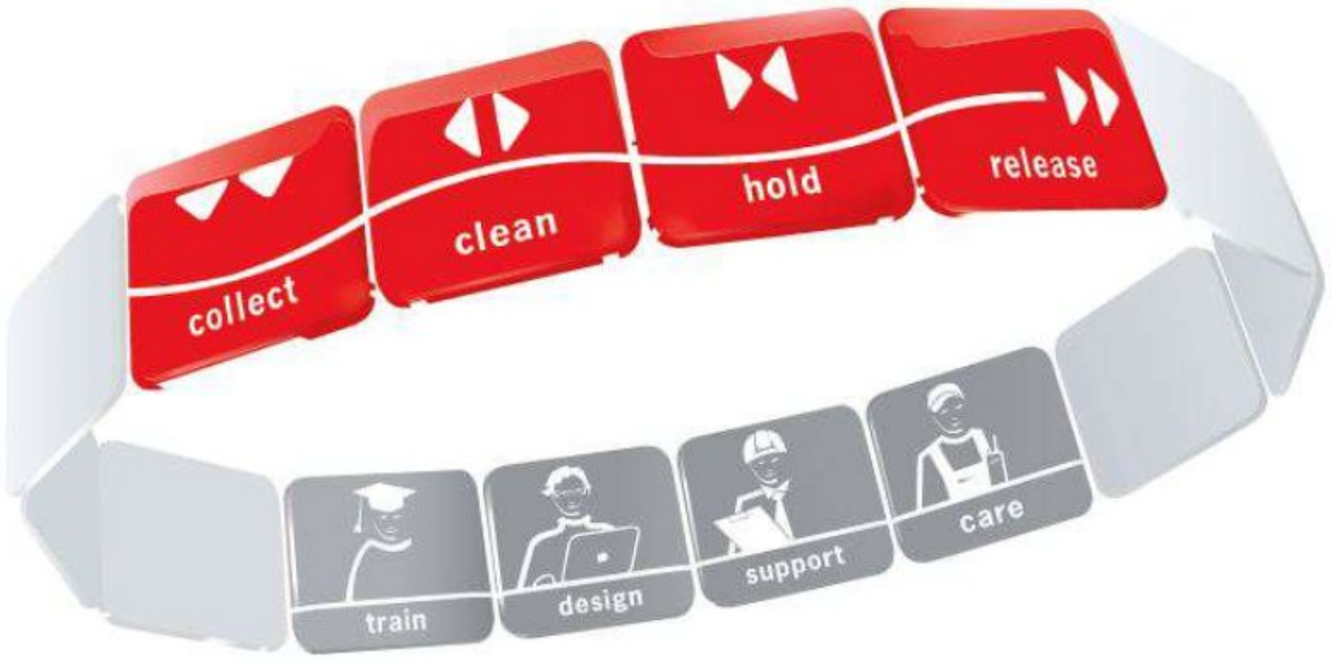
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Left to right, top to bottom, Kevin Wetzonis of Ruppert Landscape in Laytonsville, Maryland, shows the preferred stabilization method. Wood stakes are driven securely into the soil outside the root ball. The top of the stake stands at about waist height to allow movement of the top of the tree. Webbed arbor tie tape is tied around the trunk with large loops to allow for trunk growth. An overhand slipknot is pulled against a second overhand knot tied on the line, keeping the loop diameter at least six to eight inches larger than the trunk diameter. The tape is then secured to the stake to brace the trunk snugly.

CHARLES STECK, ALL















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MOST TREES DON'T NEED TO BE STABILIZED, AND THOSE THAT DO MAY BE BEST SERVED WITH SHORT-TERM, ABOVEGROUND METHODS.

appropriate modifications—and the research is quite strong in this case.

Some contractors may state that they will not offer a warranty on trees if stabilization is not included. But if the contract documents are clear and the contractor has bid the project based on the specifications, then this position would not have merit.

A reasonable approach to changing the specification could read as follows: "Stabilization (staking) of trees shall only be permitted in the event that site conditions or conditions of the tree are such that the tree is anticipated to be unstable. The contractor shall submit, in writing, for approval of the landscape architect, a request to stabilize any tree. The submission shall include the type and location of each tree, the reason why stabilization is requested, and the stabilization methods to be employed."

Recommended Stabilization Methods

In those cases where stabilization does make sense, the systems should be designed to treat the specific problems anticipated and to minimize damage in the event the trees are not maintained correctly.

I tend to favor two strong posts driven just outside the root ball and connected to the tree with a web fabric tape such as Arbor Tie. Webbed tape spreads the load on the bark, and there is no chance of a hose slipping or wire cutting into the tree. But even webbed tape can girdle the trunk if the loop around the trunk is not large enough. The tape should be tied to form a figure eight twist that is never actually tied to the trunk, just attached to the post. This allows movement and trunk growth and allows several years of growth before the loop starts to interfere with the trunk expansion. With this stabilization method, the shorter the stake, the better. The point of contact should be only about halfway up the trunk to allow the top of the tree to swing over a greater arc. The greater the amount of allowed movement, the larger the trunk taper and initial roots that can be grown by the tree.

Another traditional method is to attach a short stake to a longer guy, similar to a tent stake. With this method, the guy must be attached at the first branches of the tree to keep the guy from slipping. This method moves the support point higher in the tree. It provides greater stabilization of the trunk, however, which may not be helpful to the tree's initial trunk and root growth. As with the post method, wires and hose should be avoided; use only webbed tape tied with a large loop around the trunk.

Variations on these two approaches allow a designer's eye to refine the way the system looks, but the designer should never compromise the technical requirements of the system for an aesthetic idea that may harm the tree. For example, all the wood associated with any stabilization system, above or below the ground, should not be treated against rot. It is important that the wood decay soon enough to help the tree destroy the system, in case it is not removed, before the system damages the tree.

An in-ground stabilization system made with wood bars over the root ball attached to vertical stakes has proven to be effective in stabilizing the root ball. Two studies of this approach—one by Ryan Eckstein and Ed Gilman at Florida State and another by Cornell's Alexis Alvey and colleagues—have validated its effectiveness. Assuming that the bars are made of a soft, degradable wood, they will decay before they damage the tree and last sufficiently long enough for tree establishment.

However, in-ground systems will not solve the problem of a tree loose in its root ball, or a tree planted with loose soil below and around the bottom of the root ball. Quality nursery stock and proper planting procedures are the best solutions to these problems. An aboveground stabilization system will help with poor quality, loose balls, or poorly planted trees, but should we be using a stabilization system as a patch to accept substandard practices?

I do not recommend other types of in-ground systems, especially those that stabilize a tree using wires over the top of the root ball. They are far too likely to be left in place and damage the tree. These systems have been in wide use for only a short amount of time, so we haven't seen their effects on many landscapes yet—it may be 15 to 20 years before the tree expresses the damage. But I have already observed a few cases where their wires or web tapes remain undamaged long after they were put in place, strangling trunks and cutting into the important support roots.

Landscape architects would be better off if they understood that most trees do not need to be stabilized and accepted the short-term approach of aboveground stabilization, when needed, as part of their professional stewardship of the landscape. Many of the problems discussed here could be eliminated if landscape architects were responsible for inspecting the site after one year and making sure all tree stabilization was removed. The most important factor is the length of time the stabilization device is left in place. Most trees do not need stabilization after the first growing season, and significant damage can be observed in some cases after the second season. But if you do not anticipate enough construction administration fees to inspect the removal of stabilization, particularly belowground stabilization systems, then it is much better not to specify them in the first place. ●

JAMES R. URBAN, FASLA, IS A LANDSCAPE ARCHITECT WHO SPECIALIZES IN URBAN TREES AND SOILS AND A CONSULTANT TO OTHER LANDSCAPE ARCHITECTS.

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A SHOPPER'S GUIDE TO FAKE GRASS



UP AGAINST THE REAL THING, SYNTHETIC TURF FOR FIELDS HAS ITS PROS AND CONS.

BY KYLE STACK

If you attend a football game or take your kid to the playground, the luscious green carpet that serves as the bed for all the activity may not be real. It's increasingly likely that the grass blades are in fact polyethylene fibers, with crumb rubber infill underneath instead of soil.

Given the emerging consciousness of water and energy conservation, artificial turf is becoming the desired playing system in a variety of industries. Sports fields, playgrounds, golf course driving ranges, and residential "lawns" of artificial turf are quickly proliferating.

A fake-grass trade group, the Association of Synthetic Grass Installers, estimates that 60 million square feet of synthetic turf was installed in the United States in 2009, a 20 percent increase from 2006. Another group, the Synthetic Turf Council, claims that in 2009 there were nearly 1,000 synthetic turf fields installed in North American schools, parks, colleges, and professional sports stadiums, whereas only about 400 such fields were built in 2003. (The Synthetic Turf Council's web site says that roughly 5,500 synthetic turf sports fields are in use in the United States.)

The basic construction of synthetic turf is pretty straightforward, but the choices in materials are not exactly common knowledge.

The "face" of any system is the type of fiber used to replicate grass blades. The most common fiber materials are nylon, polypropylene, and polyethylene, although the last is by far the most prevalent. Jim Dobmeier, the president and founder of A-Turf, in Cheektowaga, New York, says polyethylene systems have two distinct advantages: durability and softness.

"They don't cause skin abrasions," says Dobmeier.

The point regarding abrasions is important because an opening on the skin, combined with players sweating during an athletic competition, invites the possibility of a staph infection.

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ARTIFICIAL TURF IS NOT AFFECTED BY WET, MUDDY CONDITIONS THAT CAN MAKE NATURAL GRASS FIELDS UNUSABLE.

Another advantage to polyethylene is that, unlike nylon, it doesn't absorb moisture. Greg Goehner, the president of NewGrass in San Diego, says the coatings on nylon blades tend to wear out faster and carry the potential risk of lead exposure. (An October 2010 study performed by the U.S. Agency for Toxic Substances and Disease Registry looked at 33 recreational and residential artificial grass applications in New York, New Jersey, Nevada, and a U.S. Army base in South Korea and found that 14 contained elevated lead levels—on nylon, polyethylene, and nylon/polyethylene blends.) Nylon's absorption capacity also may create problems with bacteria and liquids such as dog urine.

Artificial grass fiber options extend beyond the type of material and into the style used; the industry standards are known as monofilament and slit-film fibers. Jason Smollett, a marketing manager at Montreal-based FieldTurf, says that monofilament systems are more popular owing to their aesthetics. "These fibers are by far the most visually appealing and grasslike," he says, arguing that monofilaments are also resilient.

Slit-film fibers are even more durable and are recommended for high-use areas and indoor facilities in which the surface is to be used 4,000-plus hours per year, Smollett says. Their tendency to droop over faster than monofilament fibers—to fall horizontally rather than stand vertically—reduces infill splashing, or flyout, in which pellets of the infill system fly into the air when people slide or run on it.

Infill is the crumb rubber (car and truck tires), sand, and other materials that are interspersed within the artificial grass fibers. It provides stability for the fibers, although some systems have no infill. The benefit to having infill, beyond field stability, includes more cushioning for the people who play on it.

A-Turf uses primarily a mix of rubber and sand. "Rubber by itself is too buoyant, too cushy," Dobmeier says. He notes that sand gives infill the firmness and natural feel it needs. He also dismisses Goehner's contention that crumb rubber infill produces ghastly smells. Concerns have been raised that the infill materials, because they're derived from vehicle tires, produce noxious chemicals.

A February 2010 report by the University of California, Berkeley's Laboratory for Manufacturing and Sustainability determined that crumb rubber is "cost-effective and safe." Similar recent reports by universities and federal agencies can be found on the Synthetic Turf Council's web site.

Yet Goehner still calls crumb rubber "kind of dirty and smelly in the heat." NewGrass's preferred infill is Nike Grind, which is a mix of recycled Nike athletic shoes and manufacturing scraps that is also used for playgrounds and running tracks.

Keith Thykeson, the president and owner of Pioneer Golf in Newbury Park, California, says an infill system should produce roughly two and a half to three pounds of weight per square foot. "What that does is it gives the yarn ballast, which is yarn stability, and it also produces weight on the turf so that the turf isn't vulnerable to shrinking or wrinkling or moving with the temperature changes outdoors," Thykeson says.

The support system for the fibers and infill is known as the backing, a fabric sheet into which the artificial grass fibers are stitched in rows. FieldTurf uses a combination of permeable woven and nonwoven polypropylene fabrics for its backing.

Smollett says the rows of fibers must be wide enough for athletes to properly plant their foot and change direction. "The right spacing for a turf system is three quarters of an inch apart, as it has proven to provide ideal cleat interaction," he says. A system with tighter spacing could compromise foot traction because less infill would be placed between the rows.

A-Turf offers its ShockPad system, a 10-millimeter-thick rubber pad that rests underneath the turf. The pad is not only porous but it provides shock absorption, which is measured as G-max value. G-max value is a measure of hardness in which one "G" is equal to one unit of gravity. The highest amount of acceleration between two objects—the surface and an athlete—determines that field's G-max. The greater the G-max, the more stress incurred on the athlete. According to Dobmeier, the typical G-max value for natural grass is 95 to 110; A-Turf's ShockPad strives to achieve that same range. Dobmeier says that any value that exceeds

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Longwood Gardens, Kennett Square, PA, installed September 2010, photo taken August 2011

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TOUGH CHOICES:

A SYNTHETIC TURF SAMPLER





A-TURF TITAN

Titan, which is used by the National Football League's Buffalo Bills, comes with dual slit-film and monofilament polyethylene fibers and an infill system composed of rubber granules and silica sand. Its 12-year warranty is partially based on A-Turf's 50 ounces of fibers per square yard—Dobmeier says the industry standard is at 40.

$3.75 TO $4.95 PER SQUARE FOOT
WWW.ATURF.COM





NEWGRASS ULTRA

Ultra contains duo-woven polyethylene blades in which the main blades "are bolstered and separated slightly by blades that have been curled to mimic natural grass thatching," according to NewGrass's web site. The result: 69–80 ounces per square yard. Nike Grind is used for most infill, although Fresh Fill (odorless, nontoxic crushed volcanic rock) is an alternative.

$5.99 PER SQUARE FOOT
WWW.NEWGRASS.COM

CHARLES STECK, ALL

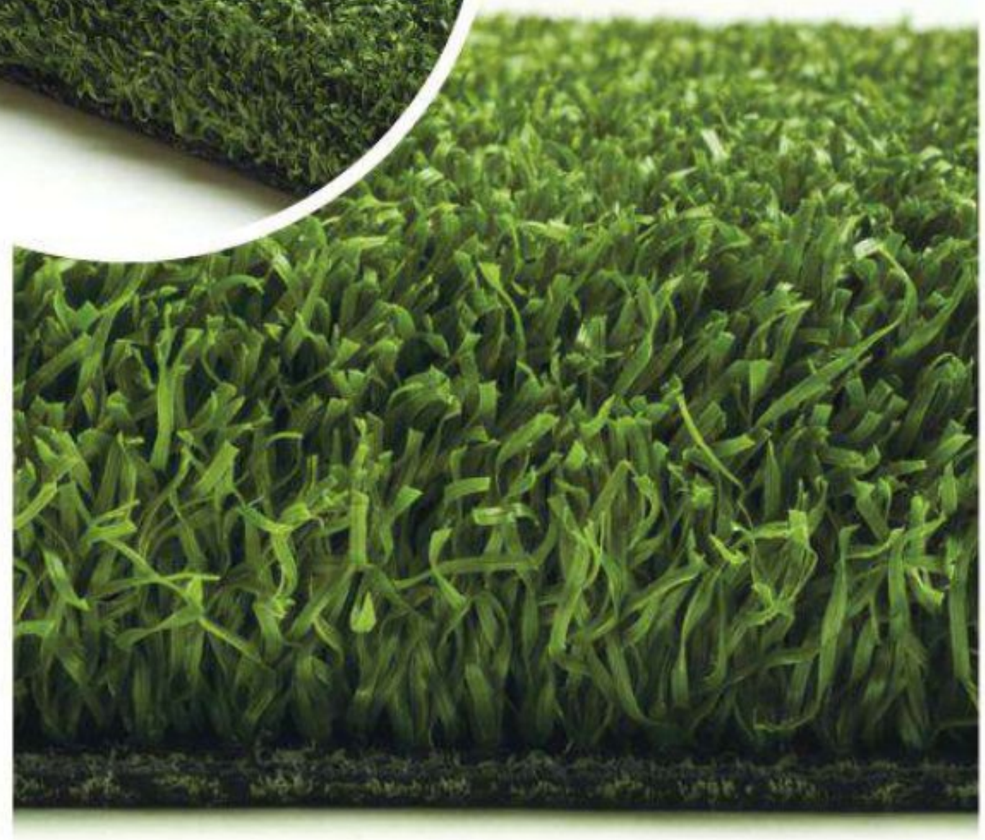
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PIONEER GOLF EZTEE HYBRID

A polypropylene and nylon blend is found in this product, which is intended for golf course driving ranges. Pioneer bills EZTee as a complement to natural grass when it needs time to heal. The product can be installed on a compacted aggregate base or on concrete.

$9 PER SQUARE FOOT PLUS INSTALLATION (PRICE VARIES BY GEOGRAPHICAL REGION)
WWW.PIONEERTURF.COM





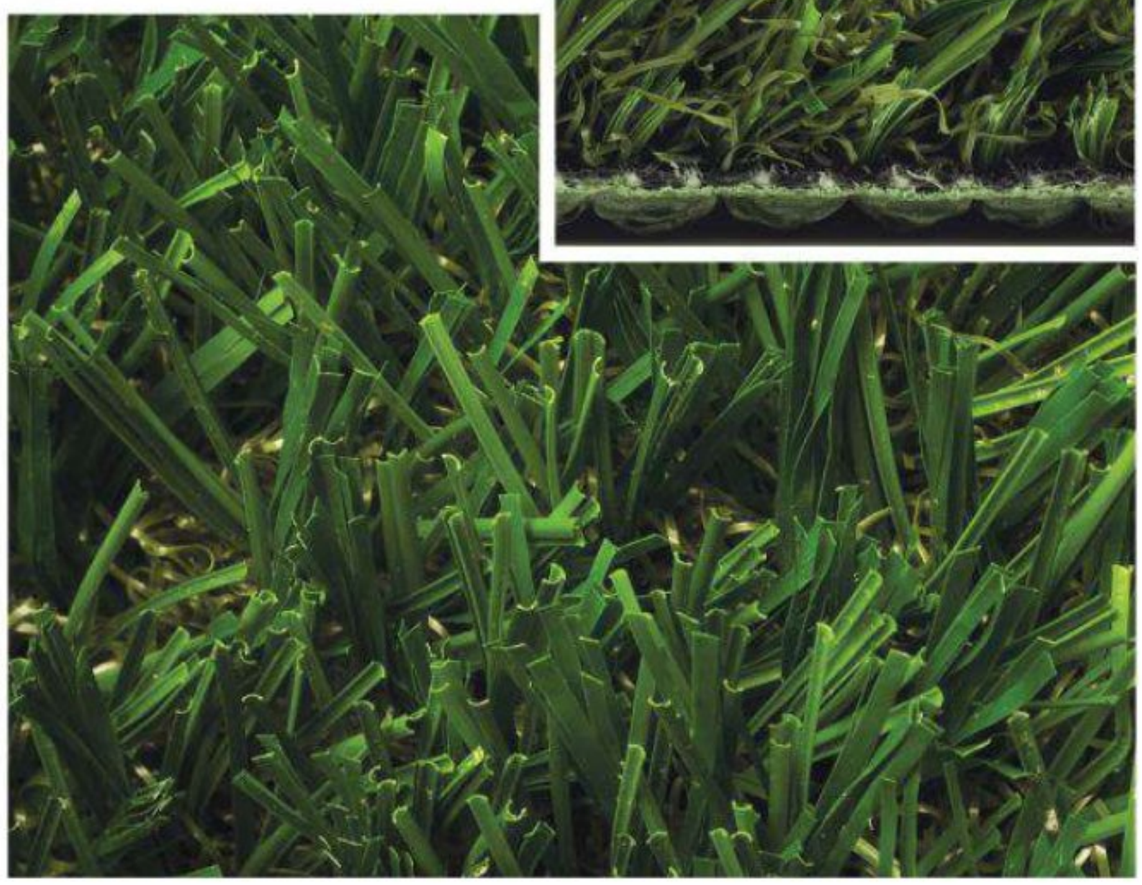
FIELDTURF REVOLUTION

In use by 21 NFL teams and more than 100 NCAA D-1 squads, FieldTurf's options include Revolution, which is billed as a fiber that resists splitting. It also features a sand/rubber infill system that weighs nine pounds per square foot and a SureLock coating system in its backing that makes it 40 percent porous.

APPROXIMATELY $5 PER SQUARE FOOT, FROM THE FIELDTURF WEB SITE
WWW.FIELDTURF.COM







ASTROTURF GAMEDAY GRASS 3D

Major League Baseball's Tampa Bay Rays and Toronto Blue Jays use the monofilament polyethylene-fiber system, which weighs 60 ounces per square yard. Crushed rubber is the primary component of the infill system, although a blend with sand and other materials is possible. The secondary backing, developed with BioCel technology, is made from plastic bottles recovered from Yellowstone National Park.

$4 TO $5 PER SQUARE FOOT
WWW.ASTROTURFUSA.COM

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THOUGH IT HAS FEWER BACTERIA THAN REAL TURF, ARTIFICIAL TURF HAS A HIGHER RATE OF SKIN ABRASIONS.

↘ 180 is considered unsafe—a frozen field would rate about a 225. The Synthetic Turf Council identifies 200 as the breaking point for safety.

Below the backing, and any shock absorption pad, lies a level of fine aggregate stone. Beneath that is a layer of base aggregate stone. To promote drainage, a geotextile fabric or liner is typically placed below the base aggregate.

Artificial turf carries a higher initial cost than natural grass, yet it holds an advantage in its long-term monetary savings. FieldTurf's web site shows that, although base preparation and materials costs for a FieldTurf athletic field are almost twice that of natural grass, its annual maintenance fees pale in comparison to that of natural grass.

An estimated 10-year cost for a FieldTurf football field is $770,000; for natural grass it's $570,000. But the increased scheduling possibilities with an artificial turf surface result in FieldTurf's calculated average cost per hour of use being $25, compared with a $91 estimate for natural grass.

Todd Britton, a marketing manager at AstroTurf, in Dalton, Georgia, identifies five reasons to switch to artificial turf: reduction in maintenance, aesthetics, safety, availability, and performance.

"I would say the top two [advantages] would be availability and maintenance," Britton says. In explaining what he means by "availability," Britton points out that the University of Kansas baseball team missed a slew of practices in the spring of 2011 because of the residual effects of weather on its natural grass field. That type of problem is solved by artificial turf, given that mud or damaged natural grass blades are no longer issues.

The amount of upkeep performed for artificial turf depends on usage, but FieldTurf's BARS maintenance program offers straightforward recommendations: *Brush* every six to eight weeks to smooth out infill levels, *aerate* a maximum of three times per year beginning in the second year to reduce compaction, *rake* every four to six weeks to prevent grass fibers from matting down under foot traffic, and *sweep* as needed so that trash and other debris are removed. Brushing, aerating, and raking are accomplished through FieldTurf's GroomRight trailer. The system attaches to the back of a maintenance cart to perform each of the three actions.

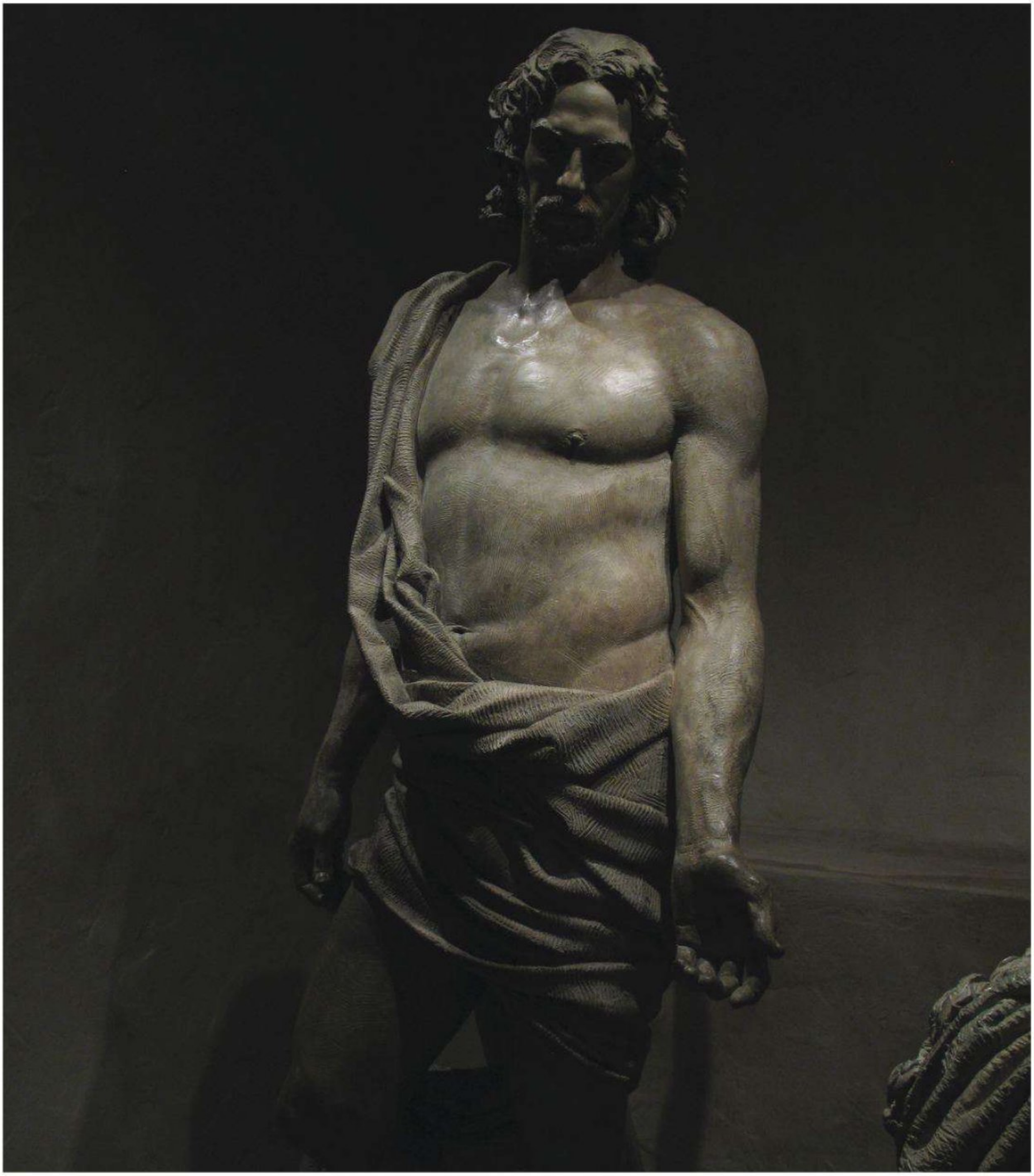
Numerous studies have shown that joint injuries don't occur at any higher rate on artificial turf than they do on natural grass, but there are other safety hazards to consider. Skin cuts and abrasions derived from fibers, particularly nylon, can lead to infection. An October 2010 report from the Pesticide and Environmental Toxicology Branch of the California Office of Environmental Health Hazard Assessment found that the rate of skin abrasions per 1,000 player hours was two to three times higher on artificial turf than on natural turf. (The report did state that artificial turf contained fewer bacteria, including staph, than natural turf.)

An August 2008 report by the New York State Department of Health (NYSDOH) found that surface temperatures on synthetic turf fields with crumb rubber infill "can reach levels of discomfort and may contribute to heat stress."

"That is the biggest risk on these fields, the fact that pigments in the fibers are dark and they absorb a lot of sunlight," says Tom Wainman, a research scientist in the Center for Environmental Health at the NYSDOH. "These things get really hot."

Milone & MacBroom, a Northeast-based civil engineering and landscape architecture firm, wrote in a report released in December 2008 that temperature studies conducted in midsummer 2008 revealed surface temperatures of synthetic turf fields that were 40 to 50 degrees hotter than the ambient temperature. ●

KYLE STACK IS A NEW YORK-BASED FREELANCE REPORTER WHO ALSO WRITES FOR *ESPN THE MAGAZINE*, *WIRED.COM*, AND *SLAM*.



BRUCE WOLFE SCULPTOR

"Raboni", 8ft. bronze, of risen Christ at the Old Santa Barbara Mission in Santa Barbara, California. Also at the mission are the companion pieces of Mary Magdalene, St. Francis and St. Claire.

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PURE FOLLY

IN THE GARDEN, OBJECTS OF AFFECTION.

BY LISA SPECKHARDT



IMPURE VESSELS BIRDBATH

The artist Deborah Brackenbury was inspired to make her concrete creations when she couldn't find a birdbath she liked for her one-acre prairie garden in sweltering Oklahoma. Working with the concrete as if it were cookie dough, she colors, rolls, cuts, and spins it in a variety of ways to create basins, bowls, plates, and vases. All of the color in the pieces comes directly from color integrated into the concrete mix—no paint is used. The basin shown is 16.5 inches long by 12 inches wide and 4 inches deep. ●

FOR MORE INFORMATION, VISIT **WWW.IMPUREVESSELS.ETSY.COM.**



STONE FOREST WILD RANKEI LANTERN

This rustic interpretation of the traditional Japanese Rankei stone lantern is carved in beige granite with a hammer and chisel. Stone Forest hand carves several styles of traditional Japanese lanterns as well as original and custom designs. All of Stone Forest's lanterns can be drilled to accommodate a standard outdoor light fixture. ●

FOR MORE INFORMATION, VISIT **WWW.STONEFOREST.COM.**

DEBORAH BRACKENBURY, TOP; © STONE FOREST, BOTTOM

GARDEN ARTISANS
MAID IN THE MUD GARDEN SPRITE

When Frank Lloyd Wright designed the short-lived Midway Gardens entertainment facility in Chicago in 1913, he collaborated with the sculptor Alfonzo Ianelli to create the Maid in the Mud Garden Sprite statues that decorated the walls. This life-size (67 inches high and 11.5 inches square) sandstone replica is authorized by the Frank Lloyd Wright Foundation at Taliesin West, Scottsdale, Arizona, and has been developed with the cooperation of the Frank Lloyd Wright Home and Studio Foundation and the Robie House, museum properties of the National Trust for Historic Preservation. A portion of the sales of these products supports the conservation and education programs of these institutions. ●

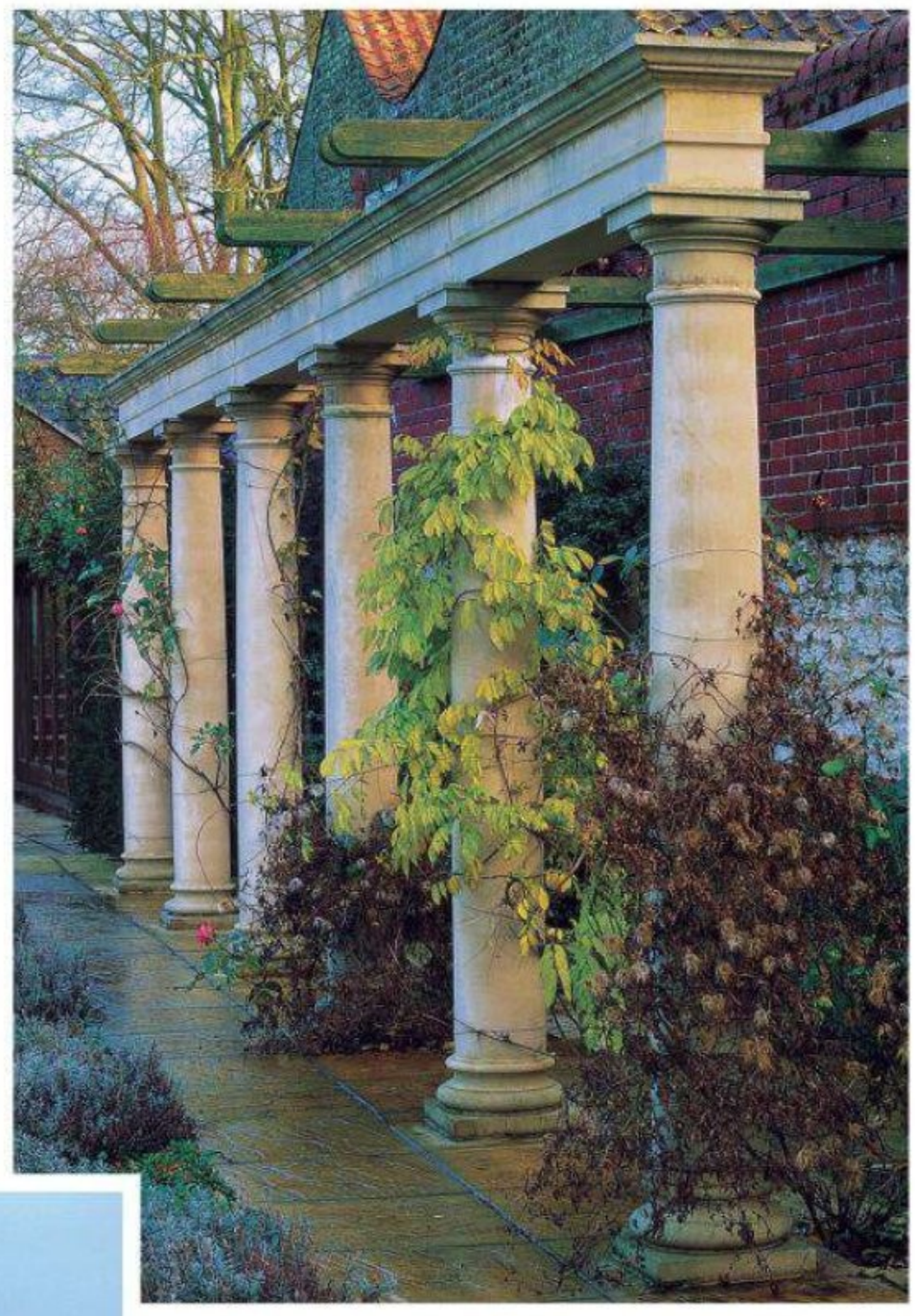
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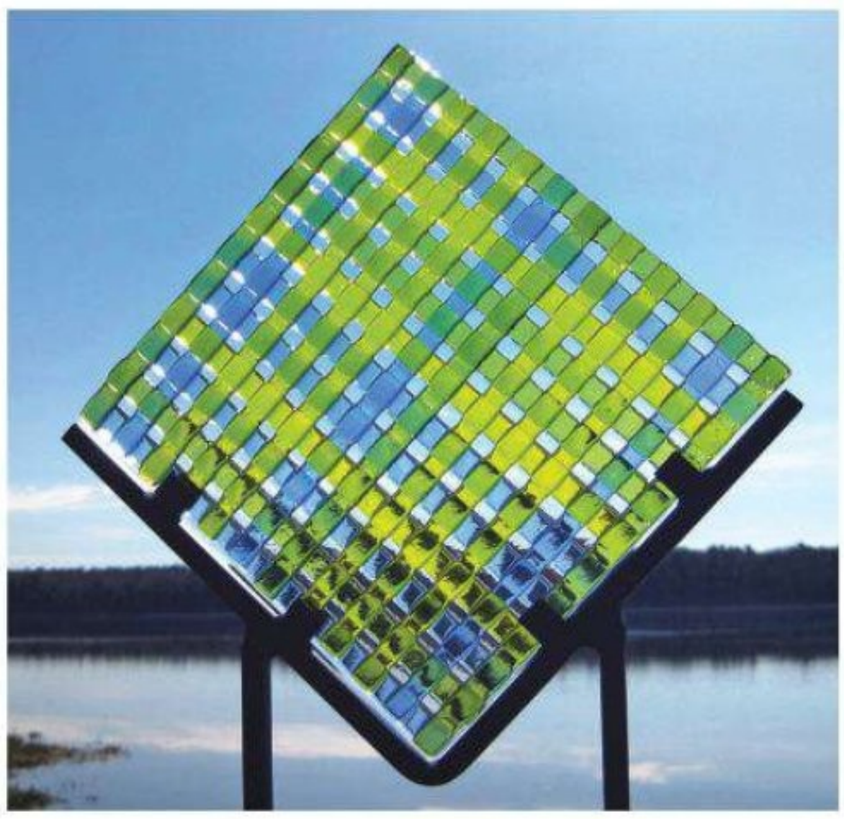


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Haddonstone's cast-stone M7 Tuscan Columns can be supplied for column spacings of up to 72-inch centers to create the pergola structure. Haddonstone uses a form of cast limestone with a surface texture similar to that of Portland stone. ●

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COASTAL ART GLASS GARDEN ART GLASS
YELLOW BLUE FOR SUN AND SEA

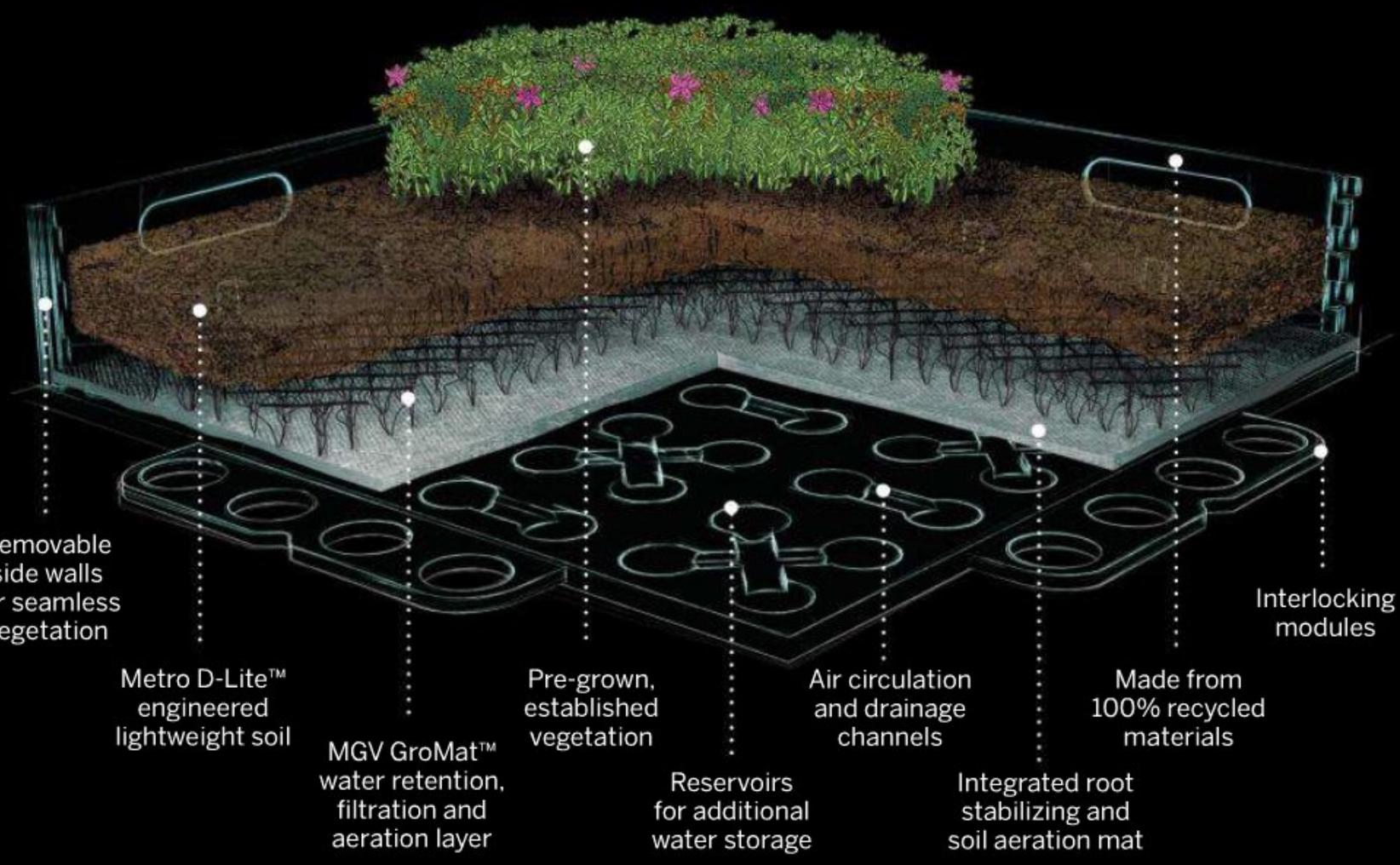
Thirty pieces of fused glass in blue, yellow, clear, and green appear to weave together to catch the outdoor sun in this work by the artist Joy Scott of Bath, Maine. The eight-inch-square glass panel comes with a custom-made wrought iron stand—the stand measures 34 inches from the ground to the base of the V where the panel sits. Bring the piece in during cold weather, as water caught in the details might freeze and damage the glass. ●

FOR MORE INFORMATION, VISIT
WWW.COASTALARTGLASS.COM.

COURTESY GARDEN ARTISANS, LEFT; COURTESY HADDONSTONE, RIGHT; AND COURTESY COASTAL ART GLASS, BOTTOM

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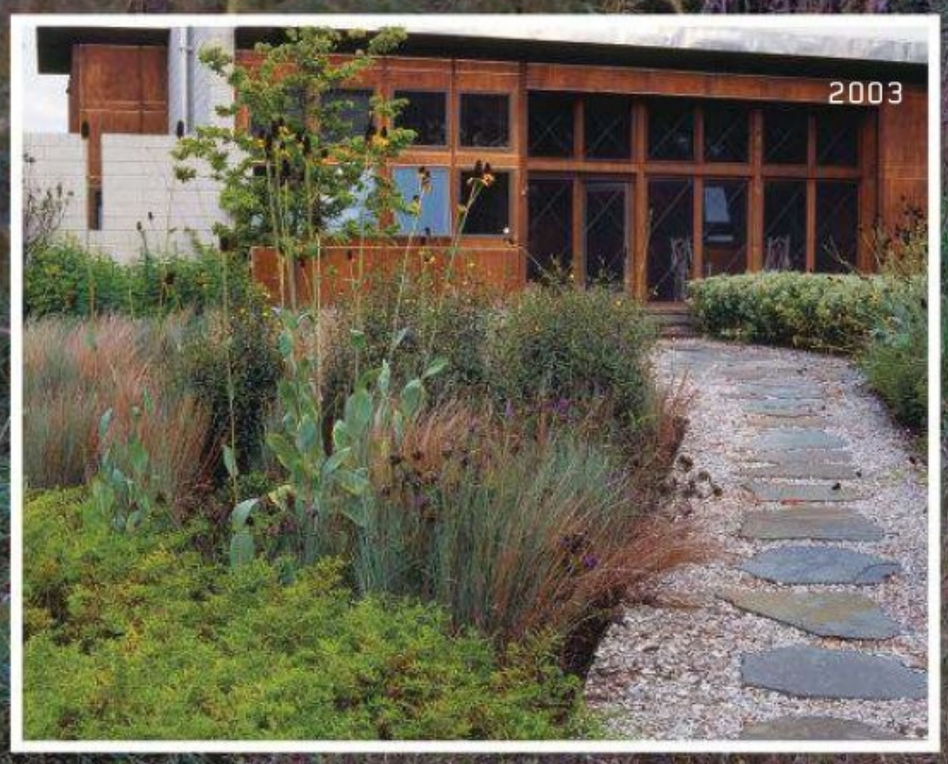
FEATURES

NEW VIEWS

The great James van Sweden, FASLA, has said he used to resent the Americans with Disabilities Act, which in 1990 began to require many different types of adaptations in design projects for people who don't move about as easily as the rest of us. Then van Sweden became one of those people and came to appreciate the law's genuine beauty—and realize certain adaptations in his own garden on Maryland's Eastern Shore. Dan Jost, ASLA, visited the garden, which has appeared in *LAM* before (January 2004), to see how van Sweden has remade it to accommodate his own compromised mobility. The visit also became an occasion to see the marvelous seasoning of a masterwork after eight years. We asked the photographer Roger Foley, Affiliate ASLA, who knows van Sweden and the garden well, to go back and capture the changes this past fall. Foley could not have prayed for better light and air. If you can't see the joy of life on van Sweden's land, you will never see it.

ROGER FOLEY, AFFILIATE ASLA

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To provide a smoother walking surface, van Sweden replaced the irregular bluestone stepping-stones leading to the front door (inset) with a path fully paved in bluestone.

LIFE CHANGES

AS JAMES VAN SWEDEN'S MOBILITY HAS DECREASED, HIS GARDEN HAS EVOLVED.

BY DANIEL JOST, ASLA / PHOTOGRAPHY BY ROGER FOLEY, AFFILIATE ASLA



Back in 1999, when James van Sweden, FASLA, began planning his weekend retreat on Maryland's Eastern Shore, his primary concerns were artistic and ecological. He knew he didn't want a lawn. "Think of all the chemicals and water and noise and gasoline that requires," he told *LAM* in 2004. Van Sweden was also taken by the horizontal lines of the Eastern Shore landscape, which reminded him of the Netherlands, where he spent some formative years.

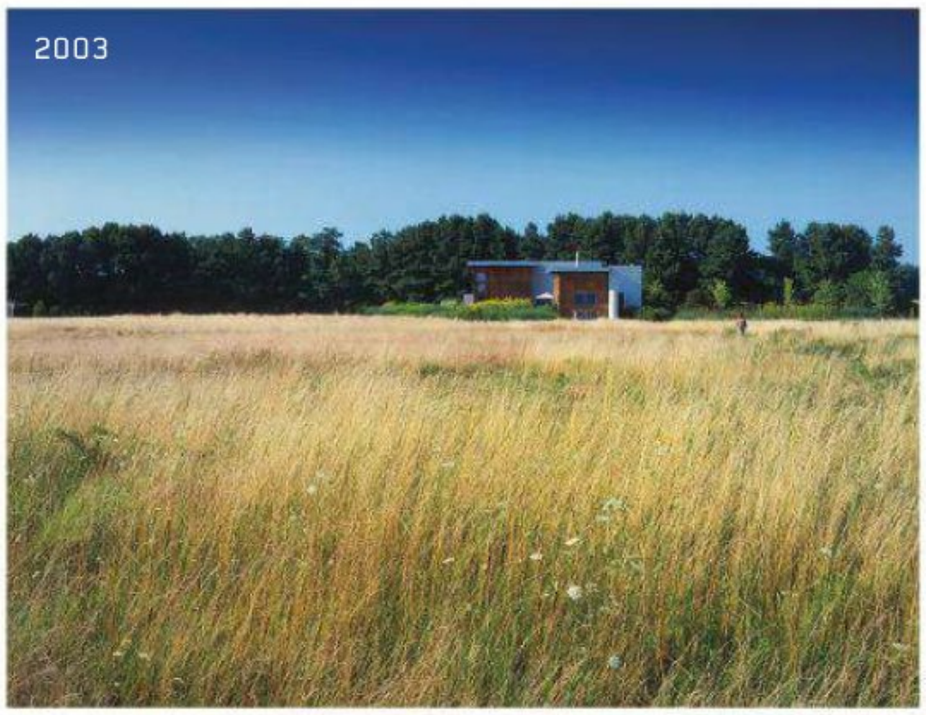
The landscape he designed, with advice from his longtime business partner, Wolfgang Oehme, FASLA, and his friend Darrel Morrison, FASLA, had few strong verticals. It was part naturalistic meadow and part patchwork quilt of meadow plants—the New American Garden style, for which the firm Oehme, van Sweden Landscape Architects (OvS) has long been known. One particularly striking photo from that period shows the deck behind the house, where you can watch the sun set over the Chesapeake Bay. Long horizontal stairs run along the deck, framing a massing of little bluestem *(Schizachyrium scoparium)*. These stairs were open, without any railings. So were the stairs leading to the front door. Van Sweden's garden, after all, was private. Why would he need railings if he didn't want them?

But about four years after the property was featured in *LAM* (see "Meadowland," January 2004), van Sweden began to have health problems. He was eventually diagnosed with Parkinson's disease. As the disease has progressed, his mobility has become more limited, as has his ability to speak. And the changes in his life have led to a number of changes in his garden, which he calls Ferry Cove.

Ferry Cove is situated in the tiny hamlet of Sherwood, Maryland, about two hours east of Washington, D.C., where van Sweden's namesake firm is based. It is barely visible from the street, sheltered by a variety of trees and shrubs. I turn into the driveway on a crisp fall afternoon and see the first sign that this is an OvS garden: On both sides of the drive are swaths

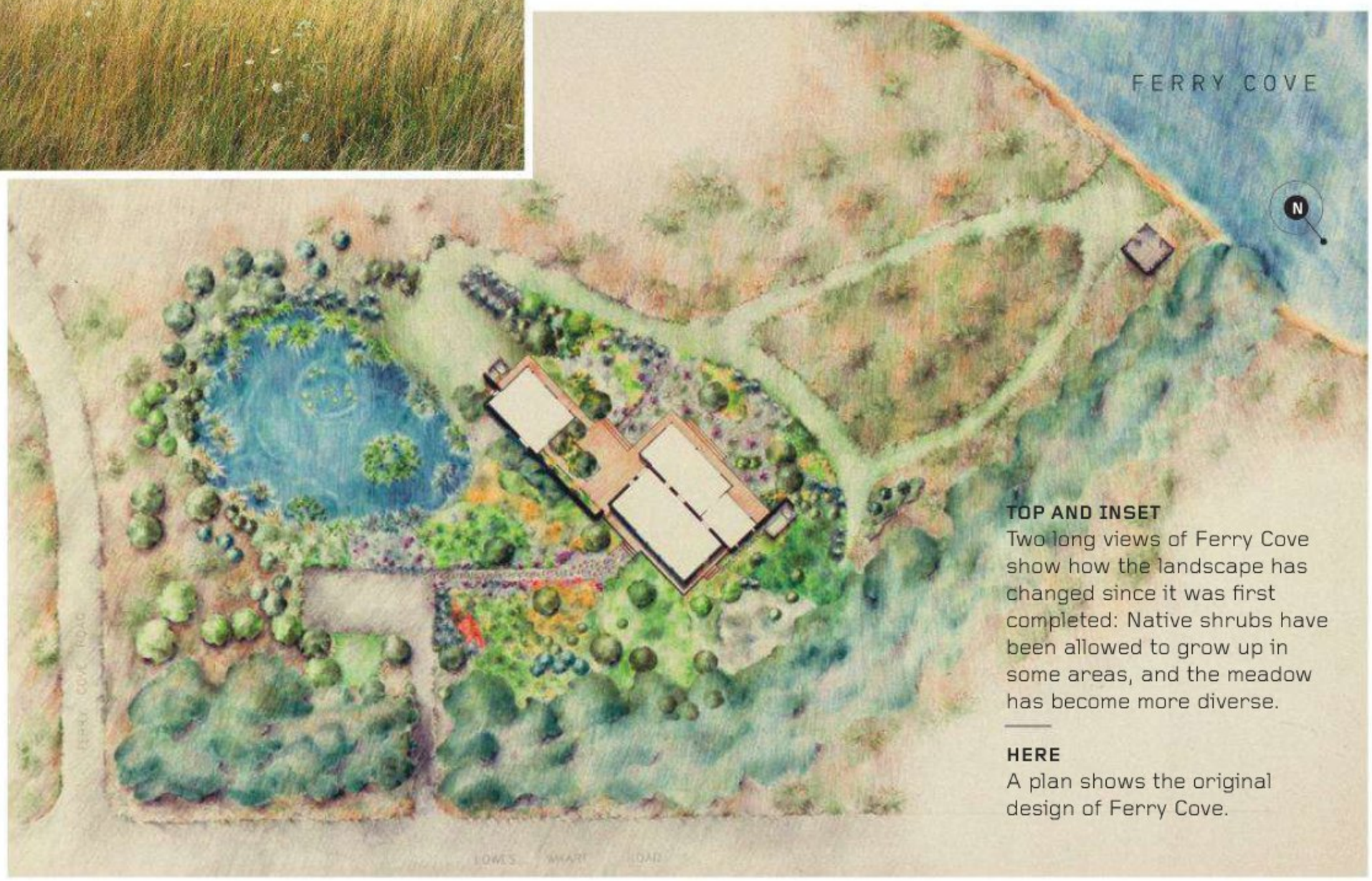
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"[VAN SWEDEN] WOULD OFTEN SAY, 'THAT'S A WEED, BUT IT'S BEAUTIFUL. SO IT STAYS.'"

—ERIC GROFT, ASLA



TOP AND INSET
Two long views of Ferry Cove show how the landscape has changed since it was first completed: Native shrubs have been allowed to grow up in some areas, and the meadow has become more diverse.

HERE
A plan shows the original design of Ferry Cove.

COURTESY DEHME, VAN SWEDEN LANDSCAPE ARCHITECTS. PLAN

of inland sea oats *(Chasmanthium latifolium)*, one of the few ornamental grasses that can tolerate partial shade. The firm's work with ornamental grasses is legendary.

I park on a pervious pad of crushed stone, surrounded by October Skies asters *(Aster oblongifolius* 'October Skies'), Northwind switchgrass *(Panicum virgatum* 'Northwind'), and other plants that rise about chest high, and make my way up a bluestone path. The photos of the garden published in 2004 show a pond in front of the house, a broad mirror of open water, but when I visit, the pond is barely visible. I later learn that there is no spring or well that feeds the pond. It is totally dependent on stormwater, and so it tends to become very shallow in the summer, allowing the Manchurian wild rice *(Zizania latifolia)* to take over.

Van Sweden tucked the house against a mature hedgerow of loblolly pines *(Pinus taeda)* that already stood on the northern edge of the site. To the west of the house lies the Chesapeake Bay. Many people seem to think that the closer you put your house to the bay, the better your view will be from the house, but Ferry Cove shows that the opposite can be true—the views of the bay are enhanced by the plants in the foreground and middle ground, even when they are not punctuated with vertical elements in a classical way. The two structures that make up the house—van Sweden's own residence and a smaller guest quarters—are unique. Each is only a single level, yet they have two stories' worth of windows—like they're lofts lifted in from the city.

The buildings are connected by a silvery gray cedar deck, raised slightly off the ground, and a concrete block "garden wall." Many of the materi-



THIS PAGE
Today, the pond in front of Ferry Cove is much smaller than it was (inset), especially during the summer and fall, when water levels are low. *Zizania latifolia*, *Iris pseudacorus*, and *Iris versicolor* have colonized its edges (top).

OPPOSITE
A driftwood folly by the artist Ben Forgey sits at the edge of the property, near the shore.

als used are relatively inexpensive, but the architect, van Sweden's good friend Suman Sorg, has arranged them in lyrical ways. Particularly impressive is the way she emphasizes the metal flashing at the top of each piece of plywood facing the building, using the flashing as contrasting lines on the elevation.

Furniture, screens, and a folly made of driftwood show van Sweden's sharp sense of humor. The oversized driftwood rocking chairs on his front porch seem like something from *Alice in Wonderland*. And inside the guesthouse, a driftwood bed puts you in the position of Goldilocks, climbing up into Papa Bear's bed. All these features were designed by the sculptor and furniture maker Ben Forgey.

The deck out back includes planted areas with hackberries *(Celtis occidentalis)* and magnolias *(Magnolia virginiana)* for shade. A mass of *Panicum virgatum* 'Northwind' runs along a rectangular pool at the edge of the deck. The ornamental grass has soft, fluffy seed heads that blend together to form a cloud, a blurred, painterly line in the landscape. This contrasts with the coarse leaves of the neighboring *Rudbeckia maxima*—a tall, yellow coneflower, which finished blooming in September but continues to hold up its black seed heads, which are particular favorites of goldfinches. The patchwork of individually massed plants near the house is separated from a more naturalistic, diverse meadow by a strip of mowed lawn, but from the house, it all seems to blend together. Many of the native grasses used in the massings have seeded in the meadow.

Although OvS's planting style can hardly be described as precious, something about the plantings here seems even less precious, less contrived than your typical OvS garden. The plants are less familiar, less horticulturally improved, wilder looking.

The next day, I visit van Sweden at his apartment in Washington, D.C. Eric Groft, ASLA, one of the partners at OvS, meets me in the lobby, and we go up to van Sweden's apartment together. Groft has worked with van Sweden on the design of his garden over the years, and he directed the design of the neighboring property, which belongs to Sorg.

When we arrive at the apartment, Alfie, the home health aide, takes us into the kitchen, where van Sweden is waiting for us in his wheelchair. A fresh bouquet of flowers sits on the kitchen table in front of him.



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Van Sweden smiles and greets us. I hold out my hand to shake his, but he is unable to lift his arm.

Groft quickly eases the awkward moment. "Dan went to college with John Knowlton," he says. Knowlton, one of the few people in my class at Cornell who took the elective course in perennials, now works for OvS. Van Sweden is smiling again.

I pull out a copy of van Sweden's new book, *The Artful Garden,* coauthored by Tom Christopher, and we look at photographs of his garden and chat about how it has changed over time. "Your garden was published by *Landscape Architecture* in 2004," I remind van Sweden. "At that time, did you consider it complete?"

"Yes, for the time being," he says. "Each stage is complete in itself."

"When did you start changing it?"

"Right away."

The earliest changes to the garden were often not planned; they were the result of letting nature take hold. Massings of one species began to blend with another. "Especially the *Silphium,"* says Groft. "The compass plant *[Silphium laciniatum]* goes where it likes to go, and it likes it wet." Sea oats similarly have seeded all over the place. And *Iris pseudacorus* (a yellowflag iris regulated as an invasive in some states) and *Iris versicolor* (a native iris with a blue flower) have completely ringed the pond.



THIS PAGE
A pool (top) was integrated into the existing cedar deck (bottom) about four years ago to provide a place for van Sweden to exercise his legs as part of a physical therapy regimen.

OPPOSITE
This snake sculpture by Raymond Kaskey acts as a handle to get in and out of the pool, which is set off by a massing of *Panicum virgatum* 'Northwind.'

When it comes to plants, "vigorous is better," says van Sweden. Back when the firm's New American Garden style was being introduced in the early 1980s, the firm used the catchphrase "tough plants for tough times."

"Now we need tougher plants for tougher times," Groft jokes. To get the OvS seal of approval, a plant needs the ability to stand on its own with little maintenance. "No wimps," says Groft.

As the garden and the meadow matured, new species that van Sweden hadn't planted would occasionally show up. That's how many of the small native shrubs, such as the Eastern baccharis (*Baccharis halimifolia)* growing at the edges of the property, appeared. And that's how large patches of blackberries and raspberries ended up on the southern portion of the property. "Jim has a great appreciation for weeds," says Groft. "He would often say, 'That's a weed, but it's beautiful. So it stays.'"

Van Sweden smiles.

One of the first areas to be changed in response to van Sweden's illness was the walkway between the parking area and his front door, says Groft. This walkway was originally paved with irregular bluestone steppingstones, set in a field of broken oyster shells. The bluestones protruded ever so slightly, so at a certain time of day, you'd see a tiny shadow on the white shells below. The path was quite beautiful to look at, but as van Sweden began to have difficulties walking and keeping his balance, each stone became a little obstacle.

So, he replaced the path with one made entirely of smooth, natural cleft bluestone. The stones are cut geometrically and the joints between them are tight. A wooden rail runs alongside the new path.



When van Sweden was still walking, it provided something to hold on to as he made his way to the house. It also provides a mount for lighting along the path, and its horizontal line creates a pleasant asymmetry as you walk toward the house.

Today, the railing continues along the edge of a wooden ramp up to ↘

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1 The oakleaf hydrangea *(Hydrangea quercifolia)* has a beautiful red fall color.

2 In the foreground planting, pink muhly grass *(Muhlenbergia capillaris)* is mixed with Tatarian aster *(Aster tataricus)*.





3 *Chasmanthium latifolium*, seen in front of the ramp, is one of the few ornamental grasses that can tolerate some shade.

4 A view of the natural meadow shows a small shrub, *Baccharis halimifolia*, sprouting up in front.

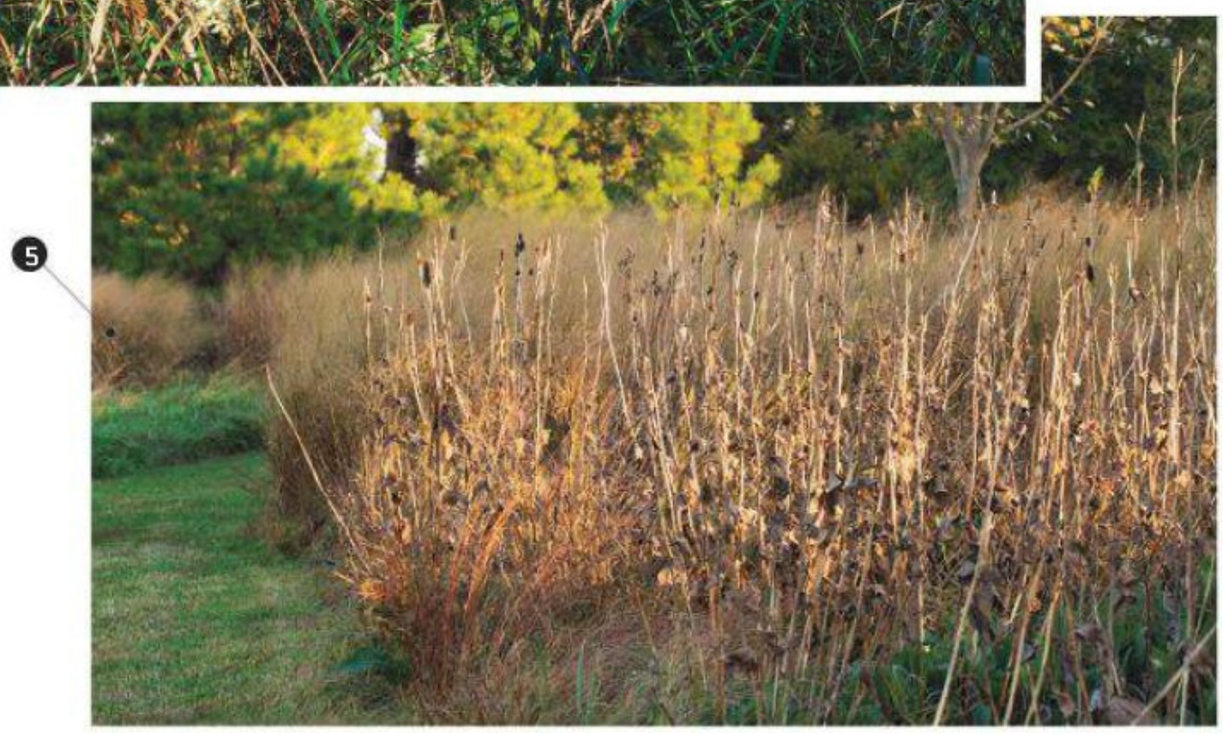
5 A mass of *Rudbeckia maxima* displays dried seedpods in the fall.

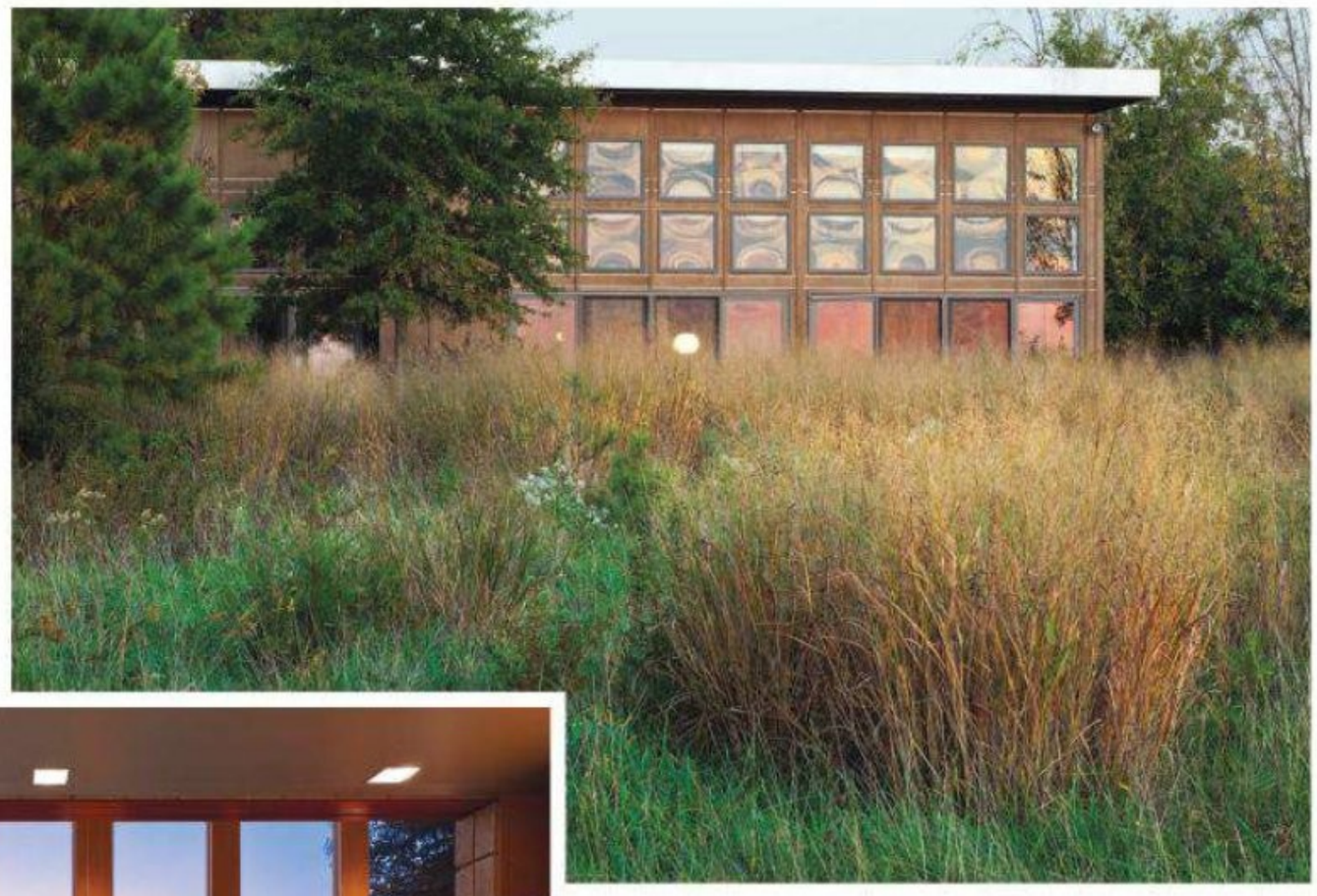


DANIEL JOST, ASLA, BOTTOM

WHEN IT COMES TO PLANTS, "VIGOROUS IS BETTER," SAYS VAN SWEDEN.









TOP
The seed heads of *Panicum virgatum* provide a painterly line in the landscape.

BOTTOM
The view from the kitchen includes few vertical elements.

OPPOSITE
The meadow is cut back about once a year to keep woody shrubs like baccharis from establishing a stronghold.

↘ the deck that connects the houses. The ramp, which was added when van Sweden began using a wheelchair, is made of the same silvery cedar as the deck. As you move up the ramp, it does not feel like a special, provisional route. There are no switchbacks or uncomfortable turns—it is a clean swoop to the front door.

Whereas the Americans with Disabilities Act (ADA) requires railings on both sides of a ramp on public projects, the fact that this was a private residence provided an opportunity to do something slightly different that addressed only van Sweden's specific needs. He would not be walking up the ramp, so there was no need for rails on both sides. Instead, one side of the ramp is open so that there is no obstacle between van Sweden and the plantings to his right as he ascends.

The biggest change to the landscape in recent years is the addition of a pool and a hot tub. Both are carefully integrated into the cedar deck at the back of the house. In the early days of his illness, van Sweden used the pool for physical therapy—to exercise his legs underwater. "It's very narrow," says van Sweden of the pool. "I didn't need width. And it's all one level." He just wanted a place he could walk back and forth and do leg lifts, he explains. A stainless steel rail runs across the far side of the pool, providing him something to hang on to. "We call it the ballet barre," says Groft. Van Sweden, who has taken ballet lessons himself, got the idea from one of his clients, Sara Schupf.

The pool was designed with extra-wide steps—16 inches wide with a nine-inch height between the risers—to help make van Sweden's descent as easy as possible. Van Sweden real-

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ized he would need something he could hold on to in order to pull himself up these steps, but he didn't want a typical metal railing. His firm had recently collaborated with the sculptor Raymond Kaskey on the World War II Memorial, so van Sweden approached him about designing a special cast bronze rail shaped like a snake. "I love the snake as a symbol," says van Sweden. "It's a metaphor for good luck."

"Particularly in the country," says Groft. "If you have black snakes on the property, it keeps the rodent population down. We've tried to introduce snakes in other water features, and the client didn't want to have anything to do with it. But with Jim being the client, he got his snake."

One of the biggest changes for van Sweden does not concern the garden itself but the way he experiences it, which is from a sitting position. "In a way, I see things from a different standpoint," he says. When you are seated, and relatively stationary, little details and specific views become more important. He says he has a new appreciation for trees as objects in the landscape where you can focus your gaze, and for looking up into them.

Most designers don't consider accessibility when they are designing residential gardens, and most clients will not ask for their gardens to be accessible. People generally think they'll be healthy forever. But van Sweden's story is a reminder for landscape architects that people's needs can change, often quite quickly. It's not always possible to make a private garden fully accessible, but little touches such as railings can go a long way. And when they are carefully planned, they can add aesthetic value rather than taking it away.

"Jim used to not be a railing enthusiast at all," Groft says.

Van Sweden smiles and signals his agreement.

But "lately, Jim has said, 'Where's the railing?' on all of our projects," Groft says. "It's made us more conscious in our decisions."

"I hated ADA," says van Sweden.

"But now you have a different feeling about it."

"Yes," says van Sweden, grinning widely. ●

HEY KIDS: OUTSIDE IS IN

A SUBURBAN VIRGINIA SCHOOL, MANASSAS PARK ELEMENTARY, TAKES ITS TEXTURES FROM A FOREST NEXT DOOR.

BY DANIEL JOST, ASLA

2011 ASLA
PROFESSIONAL
AWARD WINNER

GENERAL DESIGN









TOP LEFT
The courtyards designed by Siteworks reflect the plants found in a forest with more geometrical order.

TOP RIGHT AND CENTER
Siteworks also designed an amphitheater where classes can meet outdoors and look out over a small wetland meadow.

BOTTOM
Students study a fungus growing on an untreated oak log used for seating in the courtyards.

COURTESY SITEWORKS, TOP LEFT; © SAM KITTNER/KITTNER.COM, PREVIOUS PAGE AND ALL OTHERS ON THIS PAGE

"The outdoors is a foreign place for many of our students," Kelly Dumermuth says. Dumermuth teaches science to fourth and fifth graders at Manassas Park Elementary School in Manassas Park, Virginia. It's an ethnically diverse "city" with a suburban feel not far from Washington, D.C. "I'm an outdoor girl and love being outside as much as possible," Dumermuth says. Growing up in Colorado during the early 1980s, she often ran around barefoot, catching crawfish and frogs in irrigation ditches and jumping into piles of leaves. Her time spent outdoors as a child nurtured her curiosity and an interest in science, which led her to teaching. Dumermuth wonders where kids today will get that spark. "Not many of them go outside and play anymore," she says. "They look at me like I have three heads when I ask them if they played outside during weekends or breaks."

Dumermuth has reasons to wonder, as anyone who follows the state of modern childhood can understand.



PLAN

1 CAMP CARONDELET

2 FOREST COURTYARD WITH LOG BENCHES AND OAK PLANK PAVING

3 FIRE LANE

4 CISTERN/ INTERPRETIVE STATION

5 BIORETENTION GARDEN/OUTDOOR CLASSROOM & BUS QUEUE WITH BLACK LOCUST BENCH WALL

6 PRE-KINDERGARTEN BUILDING

COURTESY SITEWORKS

It has been almost seven years since the author Richard Louv wrote his best-selling book, *Last Child in the Woods,* which galvanized throngs of public- and child-health advocates around the threat of "nature-deficit disorder." Louv found "a growing body of evidence" that showed exposure to nature is essential to the physical and emotional health of kids. Connecting with the natural world may help ease the symptoms of attention deficit hyperactivity disorder (ADHD), learning problems, stress, and depression, Louv wrote. And yet more and more children seemed to be cloistered inside their houses, sitting in front of electronic screens. "I like to play indoors better," one boy in San Diego told Louv, "'cause that's where all the electrical outlets are."

For the students in her charge, Dumermuth has other kinds of outlets at the ready, and they are grounded in the natural world. Manassas Park Elementary, which serves students in grades three, four, and five, has a new campus that was developed atop a parking lot in front of an eight-acre Civil War encampment called Camp Carondelet. The camp is a mixed-oak forest with ferns and Solomon's seal growing on the forest floor, and nearly every major design move on the campus is meant to put kids firmly in touch with what lies outside the school walls.

The joke in some communities is that the schools are designed by the same people who design prisons. Designers concerned about strangers who might peer in seem to have



TOP
Teachers use the courtyards for a variety of activities including science projects, writing, and reading.

BOTTOM
The concrete paths draw harsher lines between human and planted areas than the stone dust path shown above.

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forgotten the value of a kid's looking out. But Manassas Park Elementary is light and airy in its construction, particularly where it looks onto the forest.

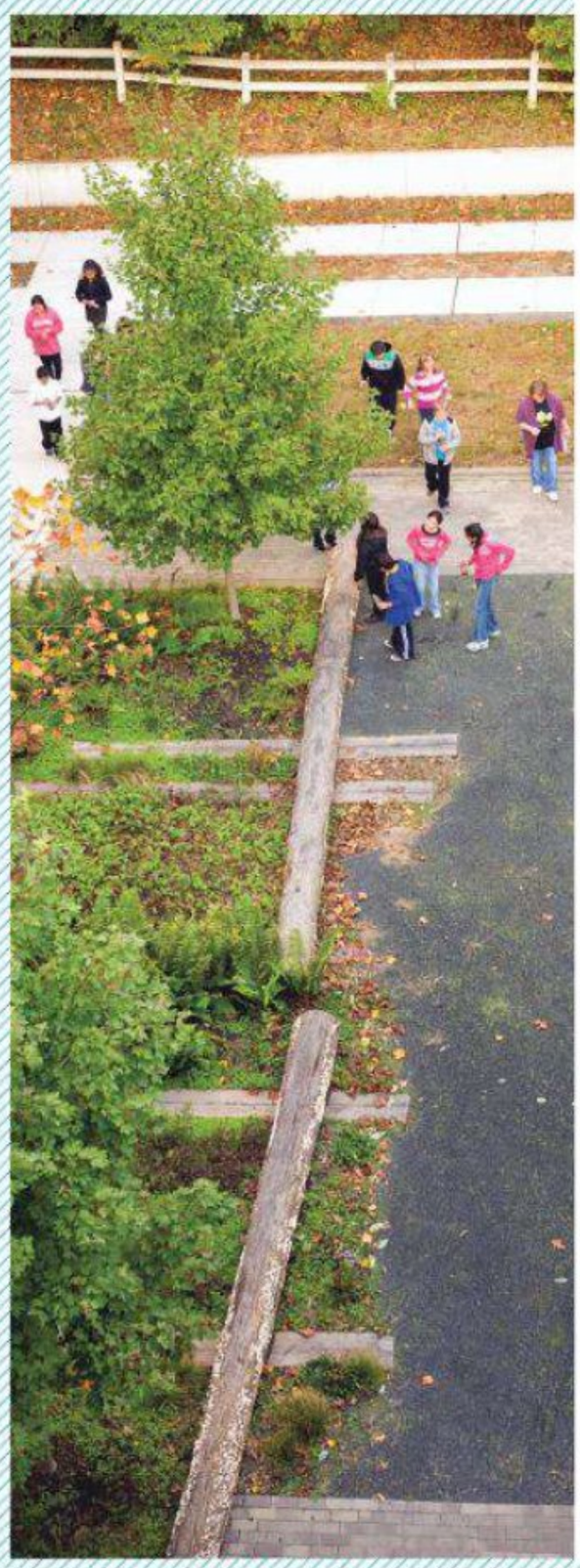
"Have you ever seen a school building with so many windows?" asks Stacy Mamon, the school's principal, as she walks me around the building on a sunny October afternoon. "There's not a space in this building where you can't see the outside." Nearly every classroom looks out onto the forest, or a courtyard with naturalistic plantings that interpret the forest.

The school building was designed by VMDO Architects, and the surrounding landscape was designed by Siteworks; both firms are based in Charlottesville, Virginia. The three-story building is laid out in an E shape with two courtyards that open toward Camp Carondelet. The cafeteria, the library, and the gymnasium run along the building's long spine, and the classrooms cluster on the three shorter hallways.

The forest comes into the hallways. The architects made views outward to

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COURTYARD PLANT LIST

TREES & SHRUBS

Acer rubrum (Red maple)
***Amelanchier arborea* 'Autumn Sunset'** (Autumn Sunset serviceberry)
Carpinus caroliniana (American hornbeam)
Fagus grandifolia (American beech)
***Ilex opaca* 'Carolina #2'** (American holly)
Liriodendron tulipifera (Tulip poplar)
Quercus rubra (Northern red oak)
Rhododendron catawbiense (Catawba rhododendron)

WOODLAND GROUND COVERS

Actaea racemosa (Black snakeroot)
Adiantum pedatum (Northern maidenhair)
***Amsonia* 'Blue Ice'** (Blue Ice bluestar)
Anemone virginiana (Tall thimbleweed)
Aster cordifolius (Blue wood aster)
Aster oblongifolius (Aromatic aster)
Aquilegia canadensis (Red columbine)
Athyrium filix-femina (Common ladyfern)
Carex pensylvanica (Pennsylvania sedge)
Chrysogonum virginianum (Green and gold)
Claytonia virginica (Virginia spring beauty)
Coreopsis verticillata (Threadleaf coreopsis)
Dennstaedtia punctilobula (Eastern hayscented fern)
Dryopteris erythrosa (Autumn fern)
Dryopteris goldiana (Goldie's woodfern)
Gaultheria procumbens (Eastern teaberry)
Geranium maculatum (Spotted geranium)
Jeffersonia diphylla (Twinleaf)
Lobelia cardinalis (Cardinal flower)
Osmunda cinnamomea (Cinnamon fern)
Phlox divaricata (Wild blue phlox)
Podophyllum peltatum (Mayapple)
Rudbeckia fulgida (Orange coneflower)
Sanguinaria canadensis (Bloodroot)
Sedum ternatum (Woodland stonecrop)
Sisyrinchium angustifolium (Narrowleaf blue-eyed grass)
Tiarella cordifolia (Heartleaf foamflower)

RIGHT
A 20-foot-wide fire lane (at rear), paved partially with Grasspave, separates the courtyard from Camp Carondelet.

the woods and brought them onto the walls of the interior. Angled boards from six hardwoods found on the site are set off by mirrors that reflect the real forest seen down the hall.

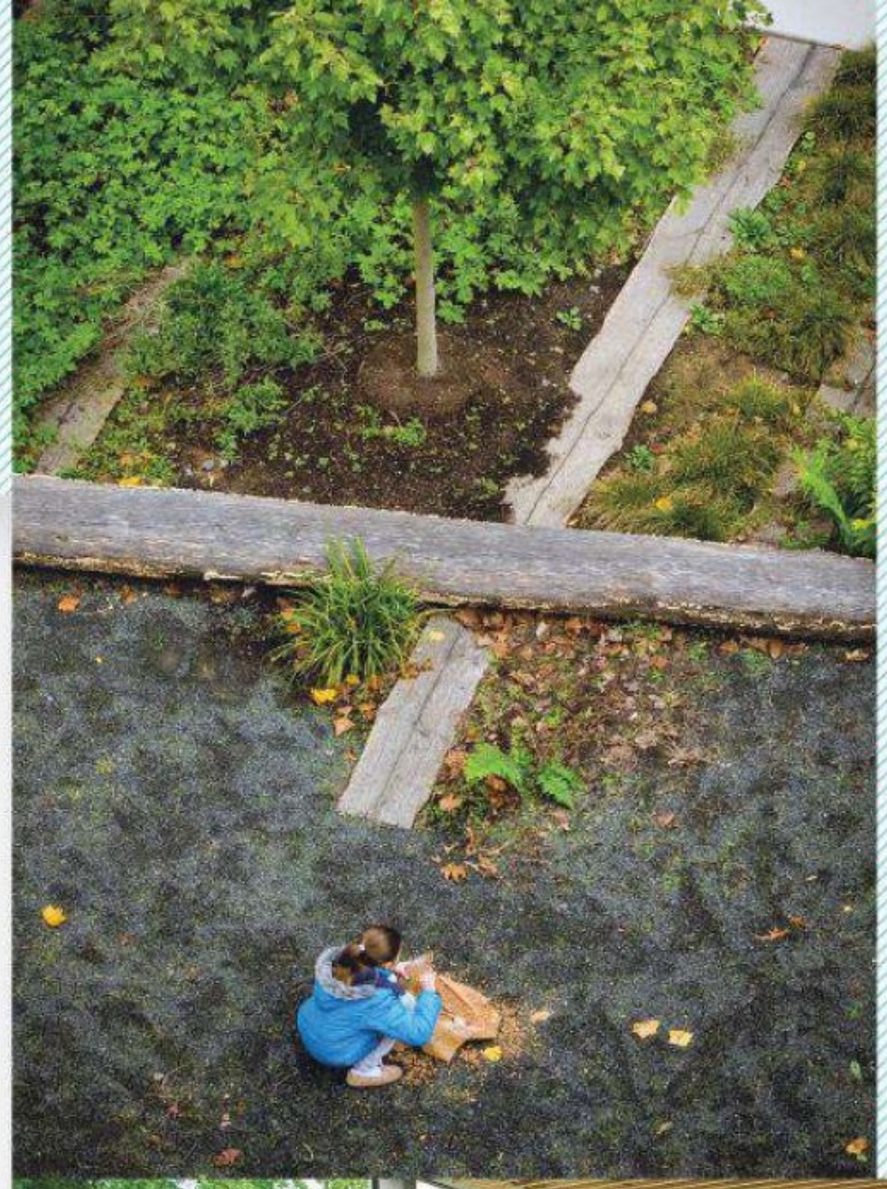
To drive a point home, the school's first floor is called the "forest floor." The second is the "understory." The third is the "canopy." Each hallway bears the name of a season—the spring house, the summer house. At the end of each hallway is a sign to show what the forest looks like in season. Every classroom has a room number, plus the name of a common native plant or animal.

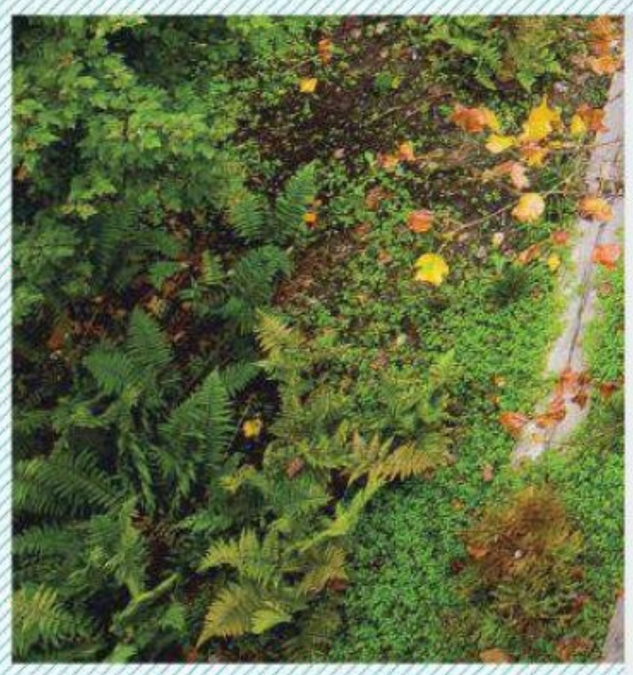
The planning ran somewhat deep. The architects and landscape architects tried to make sure that every classroom view pointed to its mascot specimen. Ms. Fischbeck's classroom, Room 2103, is identified by the flowering dogwood *(Cornus florida)*. Signs explain the school's features that are meant to conserve water and power and cut greenhouse gases. Kids learn that the lights dim with sunlight, ceilings slope away to bring in light, and the rain that falls on the roof flows to a cistern to irrigate the landscape and flush the toilets. The building has operable windows, and little green lights in each classroom say when to open them. "The students take ownership," says Mamon. "They say: 'Mrs. Smith, the green light's on!'"

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"THERE'S NOT A SPACE IN THIS BUILDING WHERE YOU CAN'T SEE THE OUTSIDE."

—STACY MAMON







TOP LEFT
The half-cut oak logs embedded in the ground and the oak logs used for seating lie atop five inches of stone aggregate to slow decay.

TOP RIGHT
The first floor of the school is nicknamed the "forest floor," the level of the forest shown here.

BOTTOM
The wide hallways on the third floor, looking over the courtyard, are breakout areas where classes can meet.

The building is separated from Camp Carondelet by a fire lane 20 feet wide. But courtyards on the building side of the fire lane bring the forest right up to the school. You see the leaf litter, the ferns, the mosses, but on an artfully organized ground plane. Half-cut oak trunks are embedded into the ground perpendicular to paths that reach out toward the forest. And uncut oak logs that run at diagonals act as benches.

Walking through Camp Carondelet reminded Pete O'Shea, ASLA, a founding partner at Siteworks, of a studio project he saw as a student at the University of Virginia. Students from the University of Pennsylvania surveyed a path between downed trees. "What really got me was how the downed trees in a deciduous forest look in plan," says O'Shea, "with the dead and decaying logs among the still vertical trees. I remember these beautiful plan-view drawings [of] trees that were living as dark symbols and trees that were down as canted lines between the trees." He says he also found inspiration in the classic children's book *Where the Wild Things Are*.

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RIGHT
The school's large windows reinforce its connection to the forest.

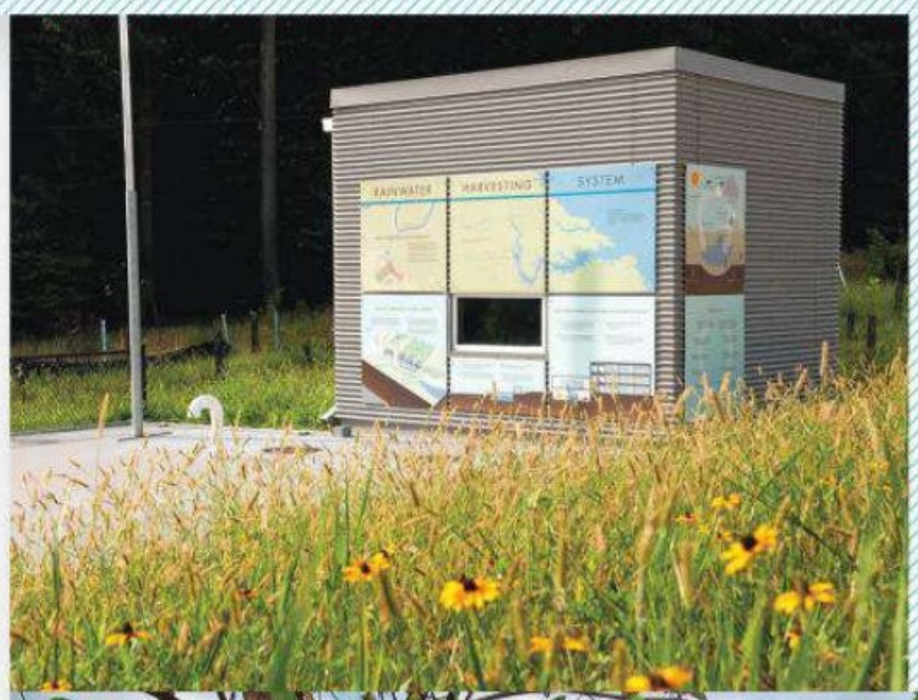
The wood paving and logs used in the courtyards are set on a stone aggregate base five inches thick. Siteworks suggested they peel the logs, but none of the wood paving or logs is treated in any way. The landscape architects wanted to show kids the process of decay. "It will change over time, and plants will distribute themselves differently than in the original plans," says Anne Russell, project manager at Siteworks. When I visited, an interesting fungus was growing on the seating logs. How often they will have to be replaced is unclear.

Besides the two courtyards, there is a small amphitheater that is integrated into a bioswale. Siteworks collaborated with the engineers at Bowman Consulting Group on its design. Concrete seat walls hold back grass terraces planted with trees. The seating looks out on a wooden stage that spans part of a constructed wetland rich with blue aster *(Aster laevis)*, switchgrass *(Panicum virgatum)*, and other species. This wetland filters water that falls on the site before releasing it into an intermittent stream. Some of that water will eventually flow into the Potomac River and on to the Chesapeake Bay.

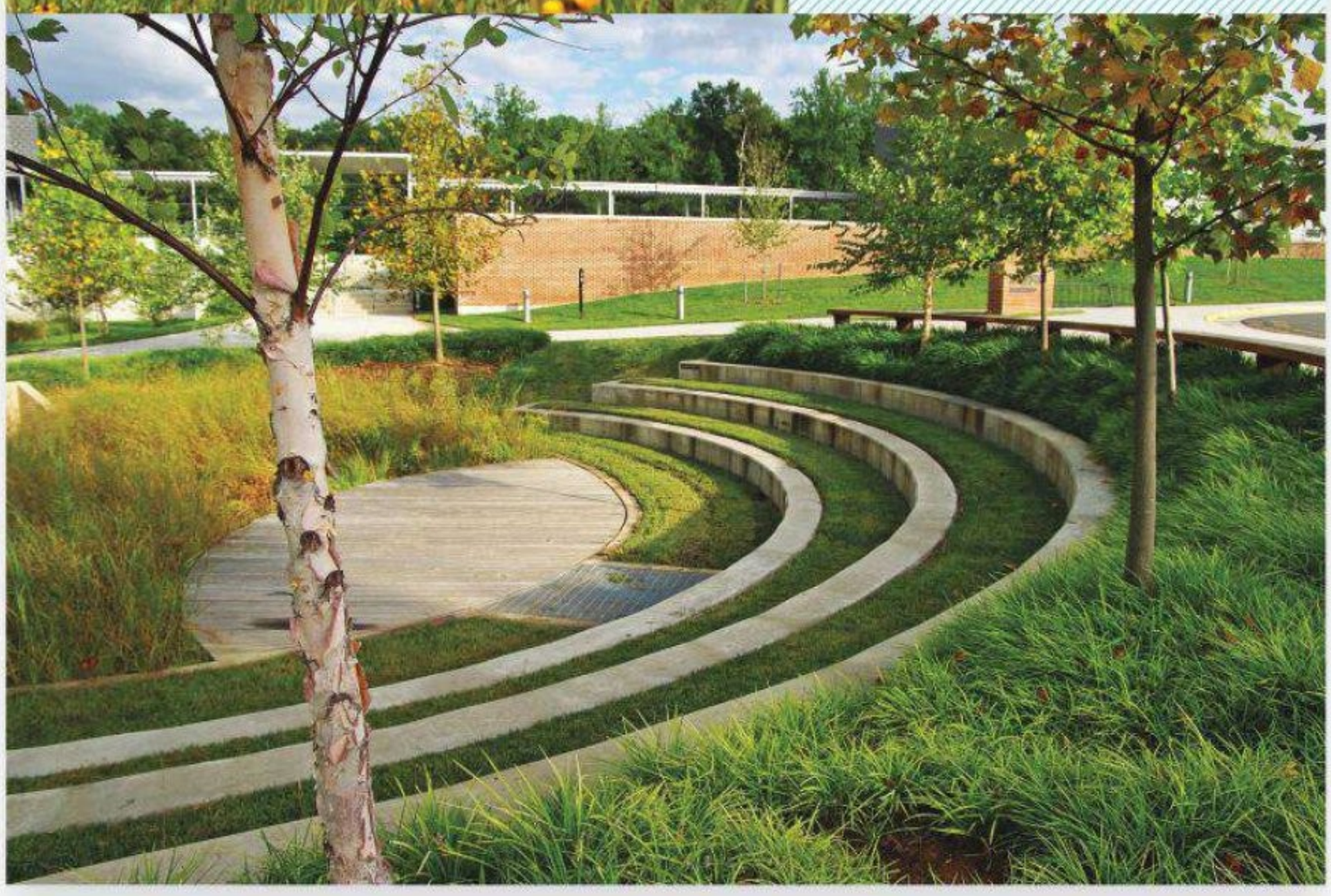
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"MOST SCHOOLS WOULD JUST SAY THAT SHOULD BE TURF."

—PETE O'SHEA, ASLA







TOP LEFT
Water from the school's roof flows into a cistern, which is interpreted with signage by VMDO.

BOTTOM
Siteworks designed grass terraces, held back by concrete seat walls, that overlook a wood stage and a wet meadow.

TOP RIGHT
Water flows through the meadow and under the deck.

"What do you see? What do you hear?" Lisa Wolf asks her students during a visit to the courtyard. They research species they find in the school's library. They write about them. "How might you describe the fiddleheads on that fern?"

The courtyards are used "a hundred different ways," says Mamon. "Sometimes classes are learning from the space, and other times they're just learning in the space, doing a math activity on their clipboards."

There is still the matter of recess, which the kids don't have in the courtyards but in fairly typical manufactured playgrounds and playing fields on either side of Camp Carondelet. (Siteworks did not design the play areas.) The playing fields have geothermal wells beneath them to cool the school in summer and warm it in winter without fossil fuels. Schools, with their big fields, are ideal for geothermal, O'Shea says. No trees, no buildings, but you can put down a lawn and create a playing field.

The school could stand to have more naturalistic plantings near its playground that children could explore during recess, though it is somewhat impressive that they have any at all. Some designers have successfully promoted naturalistic plantings in schoolyards, especially Lois Brink in Denver and Robin Moore, Affiliate ASLA, in North Carolina. But many schools simply resist such plantings.

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RIGHT
River birch trees *(Betula nigra)* are planted along the meadow's edge.

COURTESY SITEWORKS

"Most schools would just say that should be turf," O'Shea says. But Siteworks had huge amounts of support from its client, the now-retired school superintendent Thomas DeBolt.

When funding was not available to put in all the plants in the first year, Siteworks approached the district with an offer to contribute some plants for a special planting day. The superintendent agreed to match the contribution. Wewerka Construction and VMDO also contributed.

"We brought a diverse range of natives for students to plant that day," says Russell. The design team worked side by side with fifth graders, who came out to plant in 20-minute shifts. ●

Project Credits

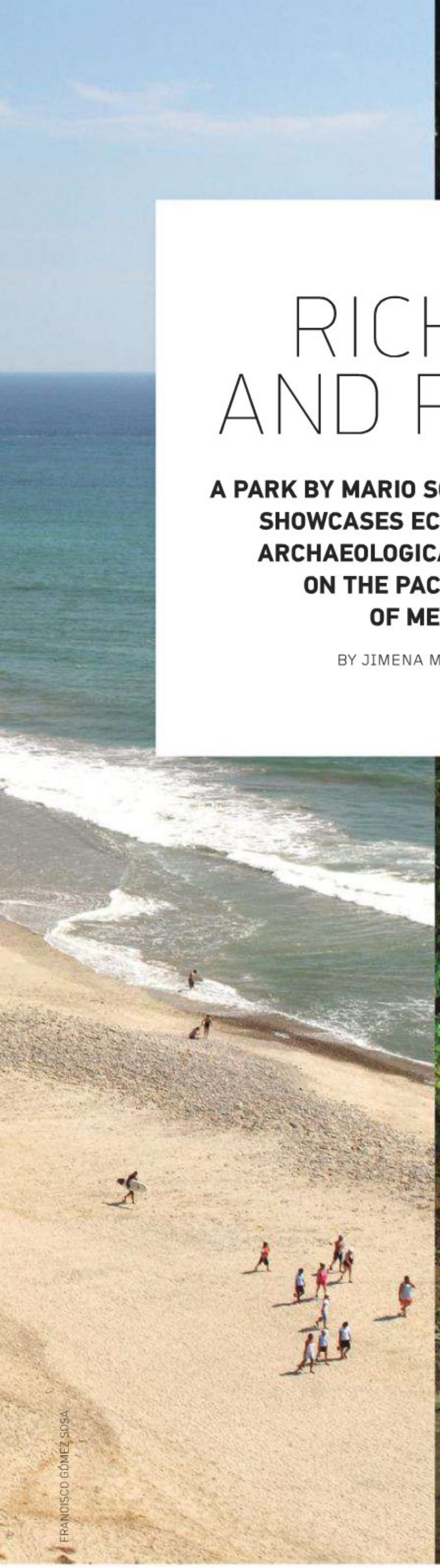
CLIENT MANASSAS PARK CITY SCHOOLS, MANASSAS PARK, VIRGINIA (THOMAS DEBOLT, SUPERINTENDENT). **LANDSCAPE ARCHITECT** SITEWORKS, CHARLOTTESVILLE, VIRGINIA (PETE O'SHEA, ASLA, PRINCIPAL; ANNE RUSSELL, PROJECT MANAGER; JOHN MEANEY, ASLA; JORDAN PHEMISTER; JENNY COX, ASLA; AND SARA WILSON). **ARCHITECT** VMDO ARCHITECTS, CHARLOTTESVILLE, VIRGINIA (ROBERT MOJE, PRINCIPAL; ROBERT WINSTEAD; WYCK KNOX; STEVE DAVIS; KATE MORA; AND DAN MORGAN). **CONTRACTOR** HESS CONSTRUCTION + ENGINEERING SERVICES, GAITHERSBURG, MARYLAND. **CIVIL ENGINEER** BOWMAN CONSULTING GROUP, LTD., MANASSAS, VIRGINIA. **STRUCTURAL ENGINEER** FOX + ASSOCIATES, RICHMOND, VIRGINIA. **MECHANICAL, ELECTRICAL, AND PLUMBING ENGINEERING** 2RW CONSULTANTS, CHARLOTTESVILLE, VIRGINIA. **COMMISSIONING AGENT** SEBESTA BLOMBERG, ARLINGTON, VIRGINIA (PAUL MCNALLY). **FOOD SERVICE CONSULTANT** EIS, INC., RICHMOND, VIRGINIA.



RICHES AND RUINS

A PARK BY MARIO SCHJETNAN, FASLA, SHOWCASES ECOLOGICAL AND ARCHAEOLOGICAL TREASURES ON THE PACIFIC COAST OF MEXICO.

BY JIMENA MARTIGNONI



FRANCISCO GÓMEZ SOSA



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IN THE STATE OF OAXACA on Mexico's southern Pacific coast, the Copalita Eco-Archaeological Park ripples over 215 acres of lowland jungles, forested slopes, and oceanside cliffs. This new park, actually a preserve located within the much larger Huatulco National Park, takes its name from the Copalita River, which empties into one of nine half-moon bays, or *bahias,* lining an idyllic coastline. Hundreds of species are protected within this ecopreserve, from coral communities to Copaline pygmy owls. Copalita also holds some of the country's richest active archaeological sites, which contain ruins of Zapotec and Mixtec settlements that date back 2,300 years. These are among the few such ruins discovered on the Pacific Coast—most are in Mexico's interior—and are all the more significant for their rarity.

The park lies about 10 kilometers (6.2 miles) from the bays of Huatulco, redeveloped as a tourist resort in the mid-1980s by Mexico's government tourism agency, Fondo Nacional de Fomento al Turismo (FONATUR). In 1984, the agency put together a group of architects and planners to create roads, an airport, and other infrastructure for a tourist village. At the same time, the government set aside the 215-acre parcel for an ecological preserve. Among other functions, the preserve protects the water quality of the Copalita River, which supplies water to the city of Huatulco. Twenty years later, FONATUR chose Grupo de Diseño Urbano (GDU), which had been part of the Huatulco tourism development team, to design Copalita Eco-Archaeological Park. In 1997 the National Institute of Anthropology and History (INAH) discovered the archaeological site known as Zona Arqueológica Bocana del Río Copalita inside the preserve, as well as other sites along the bays of Huatulco. Among the vestiges of these pre-Hispanic settlements are a pyramid more than three meters high, platforms for sacrifices, ball courts, engraved stones, and clusters of dwellings.

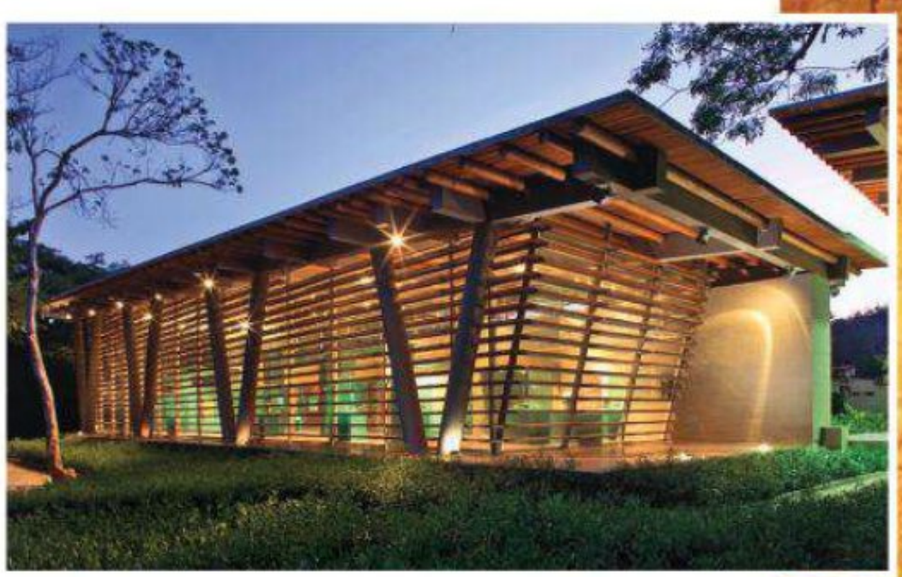
GDU's master plan divided the project's development into three phases. The first two, now complete, included the design of interpretive trails, the visitors' center, the access plaza, and the parking lot, followed by the park's two main buildings: a museum and an administrative building for archaeologists, botanists, and park managers. The third phase, now ongoing and likely to continue

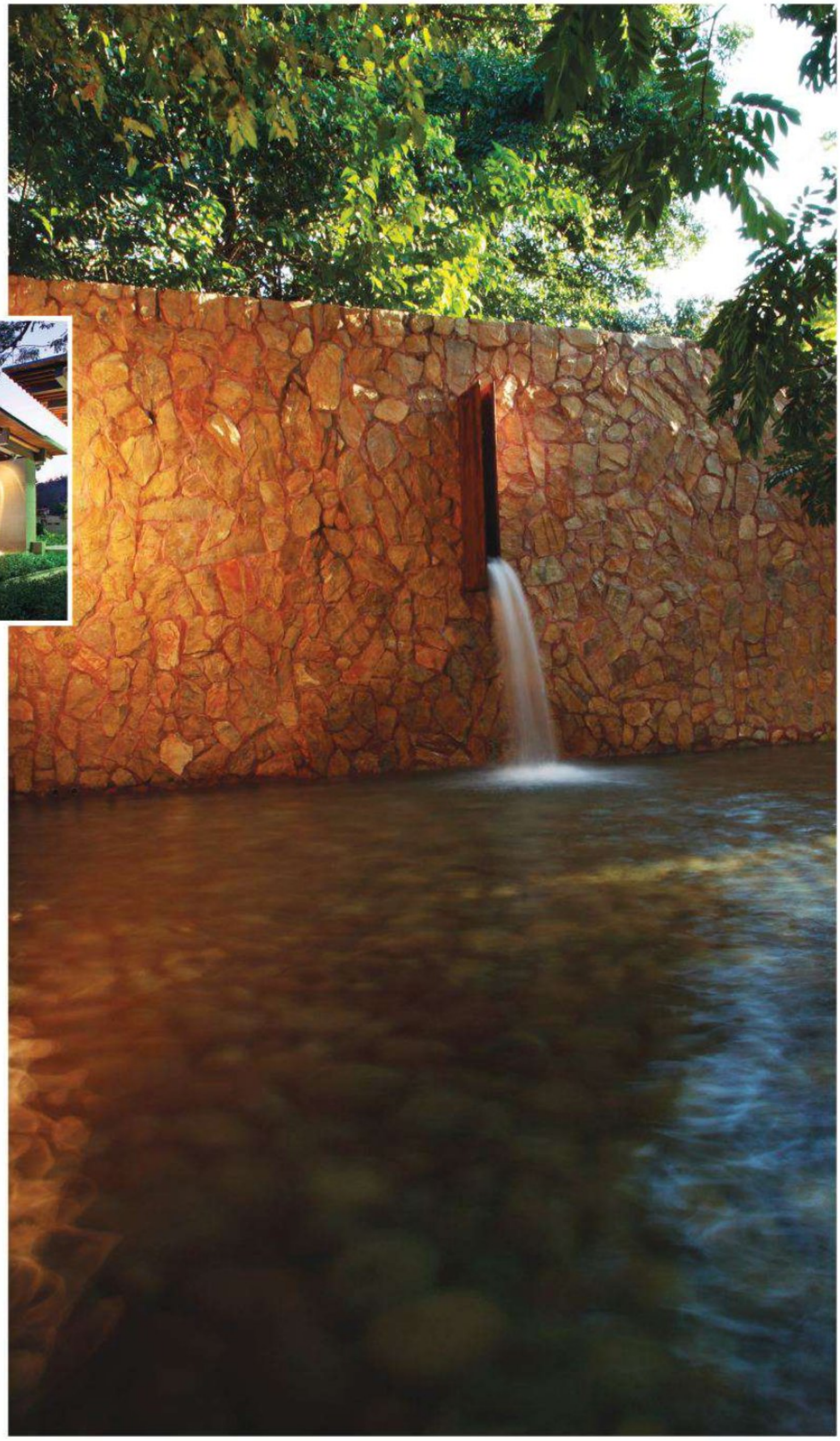
ABOVE
A path passes over the stone riverbed that captures the overflow from the Copalita River.

OPPOSITE INSET
The museum, or *Museo de Sitio,* exhibits the diverse archaeological artifacts found in the park.

OPPOSITE RIGHT
In the access plaza, water spills from an aperture into a shallow pool.

FRANCISCO GÓMEZ SOSA





for several more years, will include an ethnobotanical garden, a bird lagoon, a crocodile station, an observation tower, and a camping area. Trails for bikes and horseback riding will flow out of the camping area, and zip lines will be strung through the tree canopy.

GDU began the design by laying out interpretive trails that highlight the park's natural and archaeological features and by arranging the access plaza, visitors' center, and parking lot. The firm's founding principal, Mario Schjetnan, FASLA, is a landscape architect and architect whose honors include the ASLA President's Award of Excellence (1989). When Schjetnan joined the project, the main path system already had been designed and partially constructed by the government. He decided to use this pre-existing circulation scheme—a perimeter loop with traversing connectors and clusters of secondary loops—adding a surface of local stone over the concrete trail beds to echo the archaeological ruins.

While Schjetnan was working out the design, a team of two botanists, a biologist, and an ecologist conducted a plants inventory, and INAH archaeologists began a phased identification and ↘

FRANCISCO GÓMEZ SOSA, RIGHT; HÉCTOR VELASCO, INSET

MASTER PLAN

1 VISITORS' CENTER & MUSEUM

2 PREHISPANIC CEREMONIAL RUINS

3 AREA FOR WETLANDS DEMONSTRATION

4 MONUMENTAL TREE CLUSTERS

5 COPALITA RIVER OBSERVATION DECK

6 LOW TROPICAL FOREST

7 PANORAMIC OBSERVATION TERRACES

8 SACRIFICIAL STONE

9 PREHISPANIC RESIDENTIAL COMPLEX

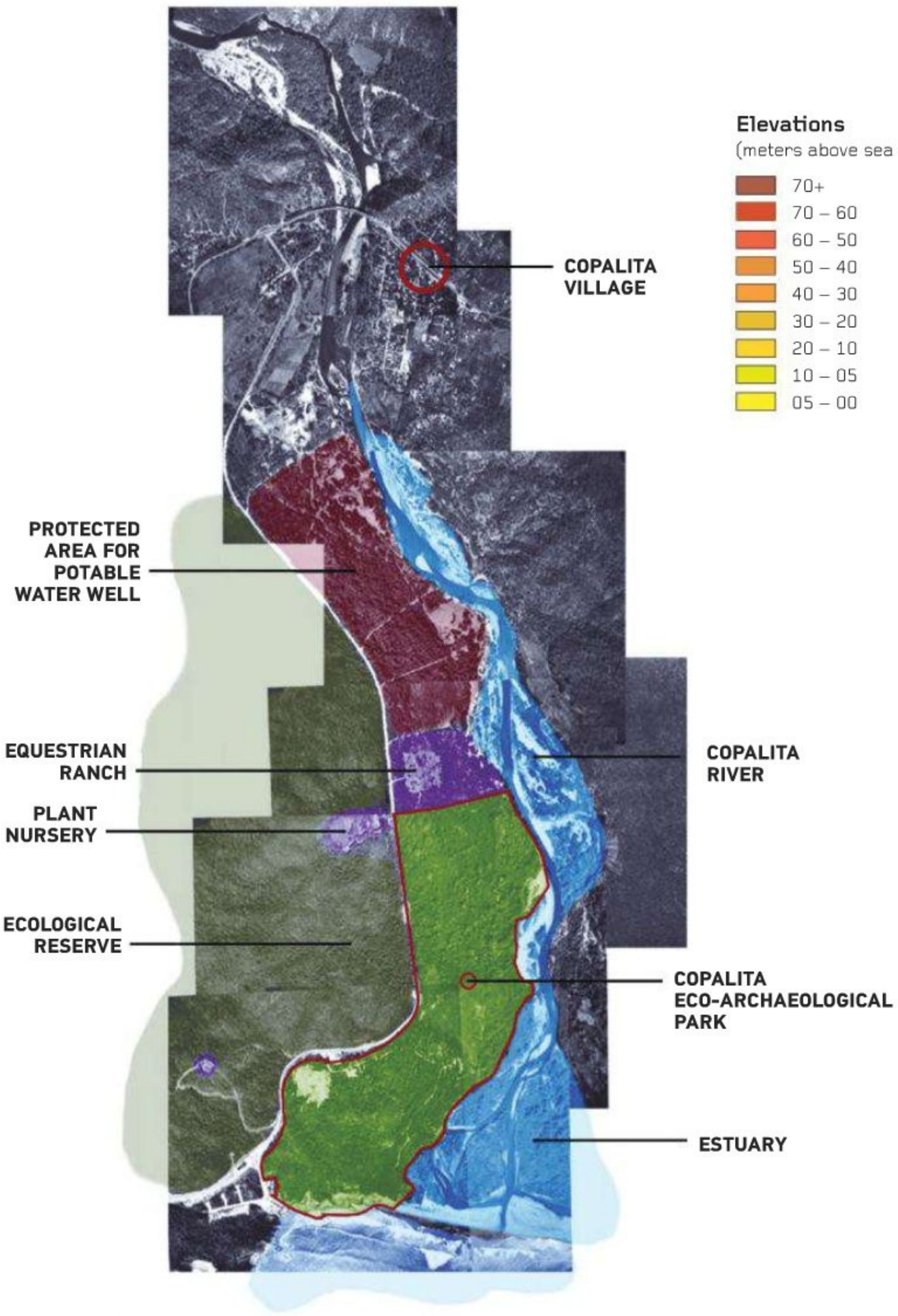
10 PALM TREES

11 SANDBANKS



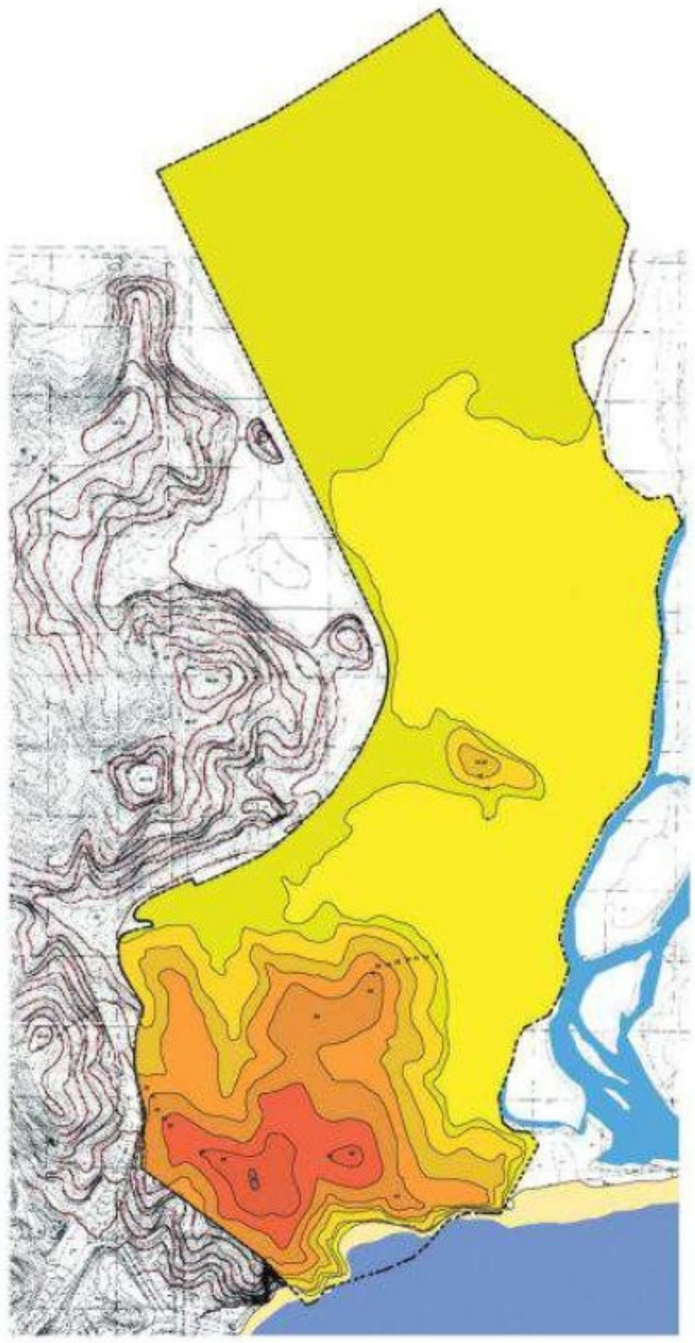
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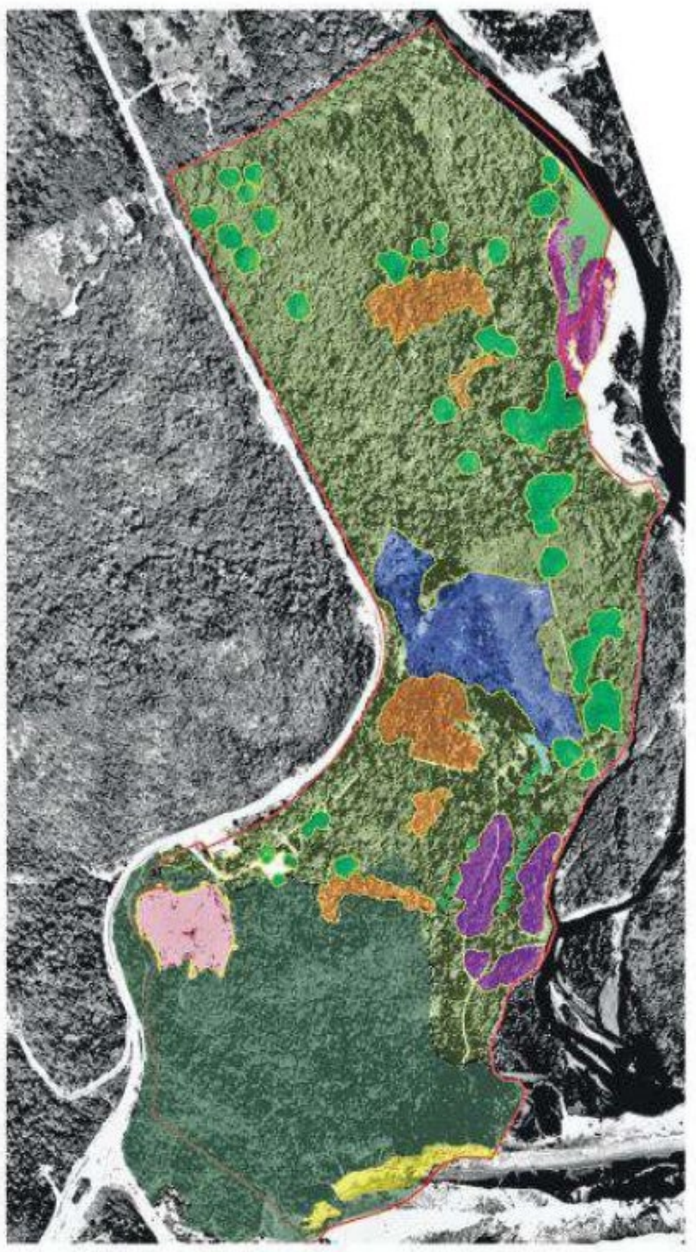
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Elevations
(meters above sea level)

- 70+
- 70 – 60
- 60 – 50
- 50 – 40
- 40 – 30
- 30 – 20
- 20 – 10
- 10 – 05
- 05 – 00





Vegetation

- Gallery forest in alluvial soil
- Low deciduous jungle mountain
- Monumental tree clusters
- Palm trees
- Low tropical forest
- Vegetation in sandbanks
- Wetlands
- Body of water
- Meander sandbank
- Beach
- Deforested area / Bank material



restoration of the archaeological sites, which will continue through the final phase of the project's development. Their findings provided the basis for an interpretive circuit that integrates trees and ancient structures and transforms the park into an open-air museum. With 3.17 kilometers (about two miles) now completed, the trail system, including recreational trails, will eventually total 8.96 kilometers (about 5.6 miles). Where the inventory identified extraordinary trees, Schjetnan designed new trails or rerouted pre-existing ones to take visitors past these specimens. Along the trails, signs provide information about the trees and other plants, birds, and animals.

"Some of the most spectacular tree species of the jungle are standing here," Schjetnan says, "and we want people to get close to them and learn about them, both by experiencing the site and by reading about it."

Following the main paths, visitors experience the park's four primary habitats: the lowland jungle, the riparian zone, the wetland, and the coastal cliffs. Where the Copalita River flows into the jungle and forms a wetland, the path widens to create interpretive viewpoints so that visitors have plenty of room to stop and read the signs. The cliff trail traces the southern border of the site, where a steep rocky bluff overlooks a vast expanse of the Pacific Ocean and, to the left, the Copalita River flowing into it. The ascending trail, built entirely of rock, contains some passages with stairs and other segments that follow the natural grade. Terraces and observation decks, set against a backdrop of lush tropical jungle, are spread out along the way. Where it reaches its highest point, the trail opens into a semicircular terrace edged by a short stone wall to form a climactic overlook. The last phase of the project, which should be completed within a few years, proposes a separate descending trail that closes the circuit and ends at the access plaza near the visitors' center and the parking lot.

The access plaza hints at the park's lush mystery with small-scale, picturesque planting compositions at the center and views of the statuesque trees that frame the park entrance. Two rectangular, boxlike buildings house the administrative offices and a museum that displays artifacts found in the park by INAH's archaeologists, part of the growing local collection. The structures meet at one corner to form an L that brackets a paved plaza

ABOVE
The plaza and the visitors' center offer compositions of native plants and trees that preview what visitors will see inside the park.

FRANCISCO QUESADA

PLAN

1 INTERIOR ACCESS PLAZA

2 VISITORS' CENTER

3 ARTS & CRAFTS MARKET

4 CAFÉ

5 SERVICE AREA

6 STREET ACCESS PLAZA

7 EXISTING WATER PUMPS

8 PRE-EXISTING CAR PARKING

9 BUS PARKING

10 CAR PARKING

11 GUTTER

12 EMPLOYEE PARKING

13 ACCESS TO WATER PUMPS

A WATER FEATURE IN THE INTERIOR PLAZA EVOKES THE RUINS VISITORS WILL SEE IN THE PARK.

COURTESY GRUPO DE DISEÑO URBANO

THE MUSEUM'S V-SHAPED TUBULAR STRUTS MIMIC THE SLANT OF TREE TRUNKS IN THE SURROUNDING FOREST.

raised slightly above ground level. Surrounding the plaza, drainage swales lined with river stone capture the overflow from the Copalita River. A variety of tropical plants and clusters of sculptural bromeliads and cacti surround the buildings. At sunset, this area glows with orange-yellow light reflected from materials used in the underside of the extended eaves of the two main buildings. During the day, these extra-long eaves also provide welcome shade on the adjacent terraces and loggias. "Shady spaces are vital in this region, because of the high temperatures year-round," Schjetnan says.

The main facade of the administrative building is composed of horizontal wood slats that act as blinds, passively cooling the interior. Sliding glass panels provide natural ventilation, and the electrical cooling systems are reserved for the hottest summer days. The museum is a simple rectilinear space with one windowless facade opposite a large glass wall, which visually admits the jungle into the exhibit area and allows abundant daylight to illuminate the interior. The eaves extending from the museum's main facade are supported by V-shaped tubular struts, which mimic the slant of tree trunks in the surrounding forest. In the space in front of the museum and administrative buildings, a two-sided stone room forms a water feature evocative of the ruins visitors will encounter



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along the interpretive trail, with water that spills from a windowlike aperture into a shallow pool in the structure's stone floor.

Conceived as a single composition, the cluster of buildings at the park entrance evokes the region's traditional housing, rendered in crisp modern lines and with innovative construction details. The entrance compound presages the strong sensory experience of the park, with its colorful plants, the mysterious sounds of animals and birds, and the omnipresent whiff of the ocean. These images, sounds, and aromas infiltrate the buildings; the designers have privileged the natural experiences of the park above all others.

The park managers are starting to schedule educational tours for local schools and integrating these and other events into larger cultural programs run by government agencies. Meanwhile, the park is attracting tourists who have come to Huatulco for the sheltered beaches of the beautiful bays. They are surprised to find another, wilder piece of paradise here, with culture almost as old as the hills. ●

JIMENA MARTIGNONI IS A LANDSCAPE ARCHITECT, WRITER, AND CURATOR BASED IN BUENOS AIRES, ARGENTINA.

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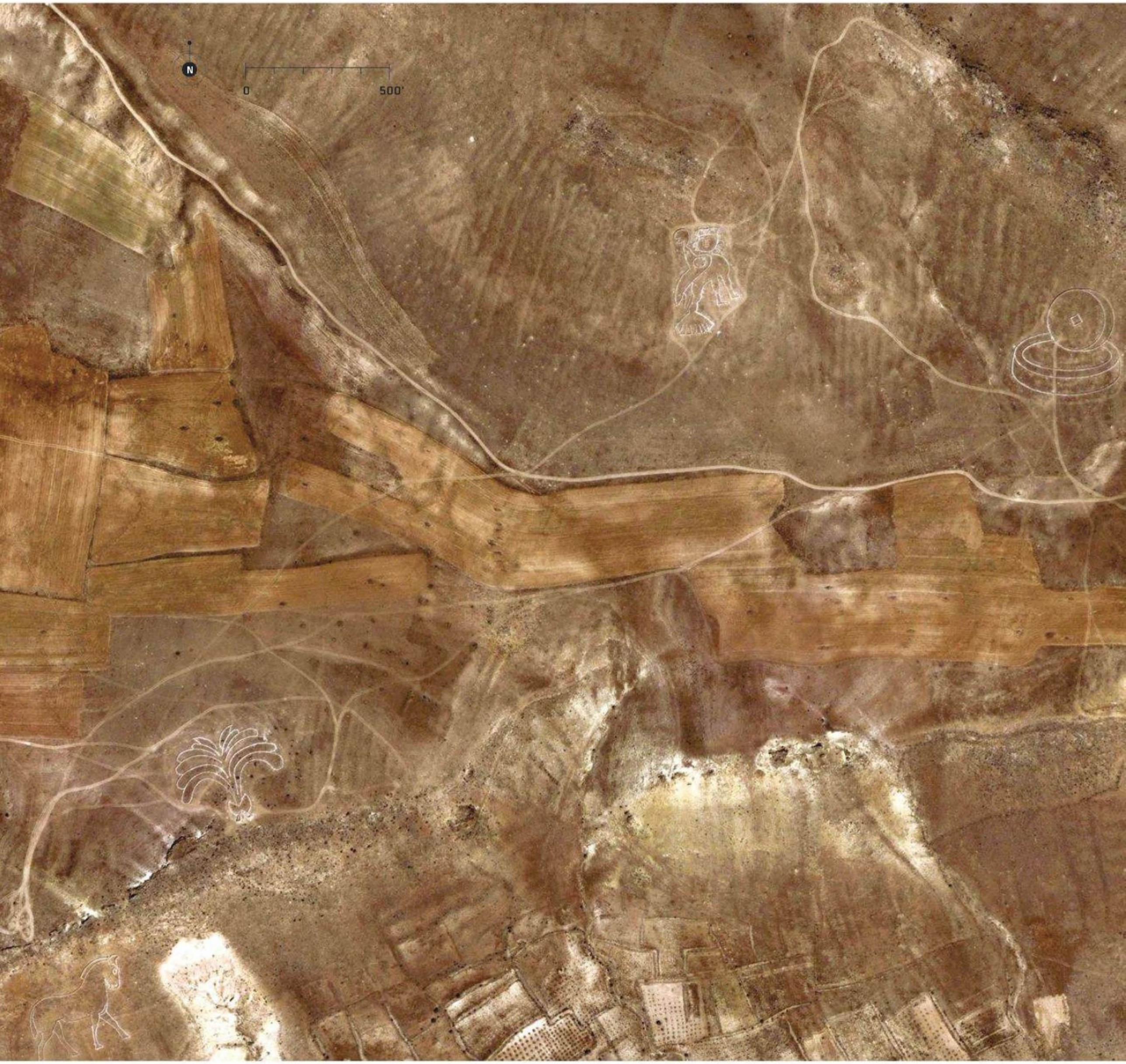
LANDSCAPE ARCHITECT MARIO SCHJETNAN GRUPO DE DISEÑO URBANO, MEXICO CITY, MEXICO (MARIO SCHJETNAN, FASLA, PABLO ROMERO, DESIREE MARTÍNEZ, OCTAVIO MÉNDEZ, MARCO FABIÁN A., FRANCISCO LUNA, ALEJANDRO CUEVAS, JESSICA NAVARRETE, LETICIA VIVAS, MARÍA DE JESÚS TAPIA, DESIGN TEAM; J. MANUEL PENICHE, PROJECT COORDINATOR). **CLIENT** FONDO NACIONAL DE FOMENTO AL TURISMO (FONATUR), MEXICO. **CONSULTANTS** ALFREDO SAYNES AND EMMANUELLE GAMBOA. **GRAPHIC DESIGN AND FURNITURE** I. D. DANIEL OLVERA AND NEKO DESIGN, MEXICO. **STRUCTURES** G. C. ASOCIADOS, MEXICO. **INFRASTRUCTURE** NLZ INSTALA AND RCL INSTALACIONES, MEXICO. **MUSEUM AND ARCHAEOLOGY RESEARCH** NATIONAL INSTITUTE OF ANTHROPOLOGY AND HISTORY (INAH), MEXICO.

HÉCTOR VELASCO, THIS PAGE; FRANCISCO GÓMEZ SOSA, OPPOSITE

OPPOSITE
Some of the existing trees date from pre-Hispanic times and were treated by specialists.

BELOW
Extra-long eaves provide shade for visitors.





ANDREW ROGERS'S LAND SCULPTURES IN THE CAPPADOCIA REGION OF TURKEY

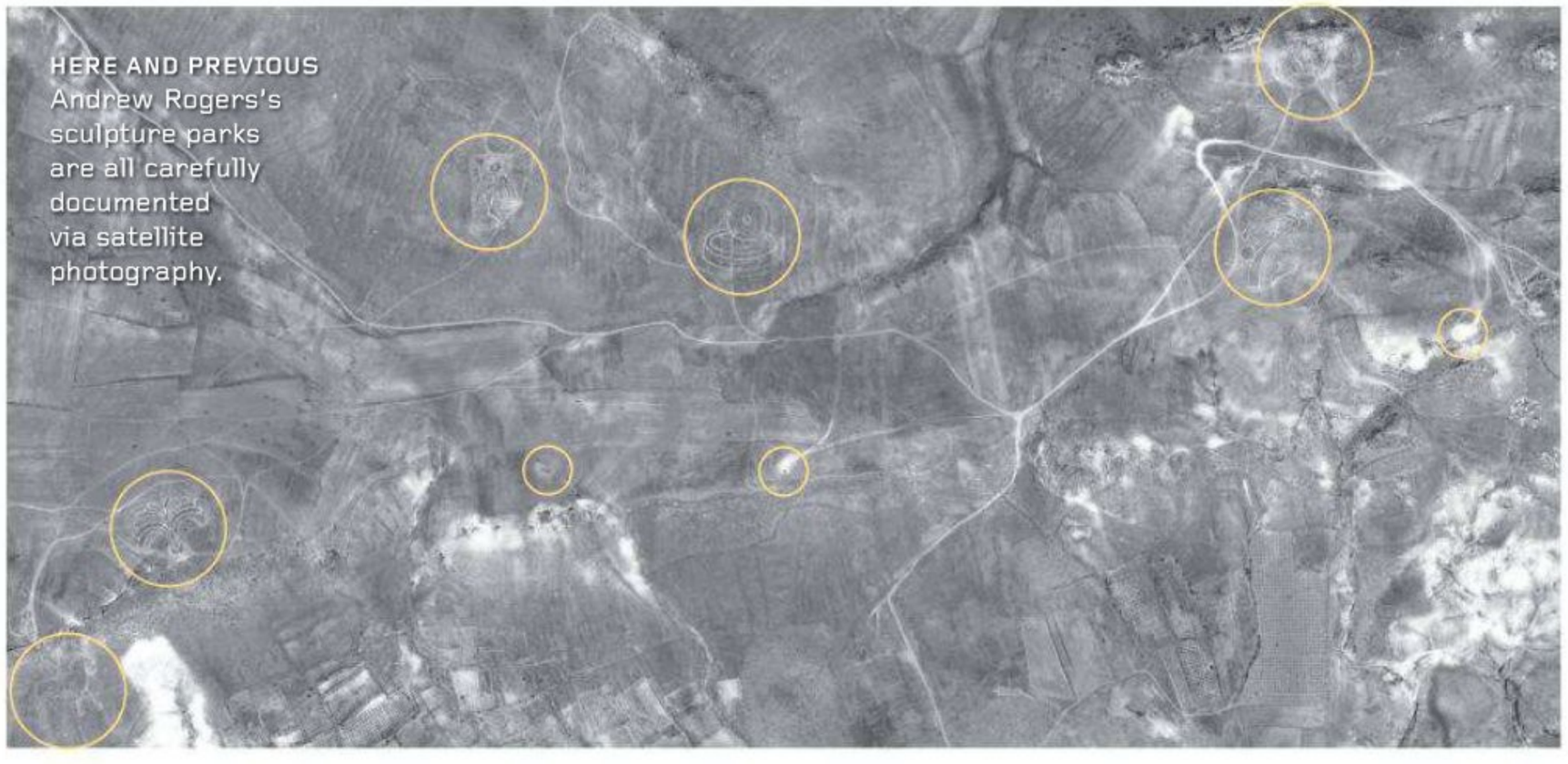
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SEEN FROM SPACE

ARE ON SUCH A GRAND SCALE, THEY ARE VISIBLE FROM SPACE.

BY JAMES GRAYSON TRULOVE

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HERE AND PREVIOUS
Andrew Rogers's sculpture parks are all carefully documented via satellite photography.

ALL IMAGES COURTESY ANDREW ROGERS

ANDREW ROGERS COULD PROBABLY HAVE BUILT ROME—IF NOT IN A DAY, THEN PERHAPS IN A WEEK OR SO.

AT LEAST, HE COULD HAVE IF THE ROMANS HAD LENT HIM A HAND.



AS EVIDENCE, consider his *Rhythms of Life* land art project, a collection of 12 large-scale sculpture parks erected on all seven continents in exotic locations including deserts, fjords, gorges, and national parks. In all, the parks contain 47 stone structures that required more than 6,700 people to assemble, including 1,000 soldiers from the Chinese Army for Rogers's installation in the Gobi Desert, near the Great Wall, in 2006. Often stretching for nearly two miles, his creations are so massive that each of them has been photographed from a satellite orbiting hundreds of miles above the earth. And because of the enormously large workforces that he is able to organize at each site, many of the largest pieces were assembled in just a few days.



ABOVE
This 52-foot-tall basalt arch is the gateway to a small amphitheater carved from the rock formation in the distance. The sculpture encourages visitors to sit in this amphitheater and "listen" to the silence of the surrounding land.

It was approximately 15 years ago that the Australian-born Rogers, now in his mid-sixties, abandoned a successful career in finance to pursue his passion. By 1999, he had installed his first geoglyph, *To Life,* in the Arava Desert in Israel. Now, 11 projects later, he's just completed perhaps his greatest effort, the Time and Space sculpture park seven kilometers from Goreme in the Cappadocia region of central Turkey. After five years of work, the installation in the summer of 2011 of the tallest basalt arch in the world, each column weighing 80 tons and spanning more than 60 feet, marks its completion.

Under consideration to become one of Turkey's national parks, Time and Space is set in an area of astounding natural beauty that is considered one of the country's most important cultural and historical sites. According to Rogers, his roughly two-square-mile sculpture park is the largest of its kind in the world, although when viewed from the air, it seems remarkably modest within the context of a landscape that is part lunar, part Grand Canyon. Formed several millennia ago as the result of a gigantic lava eruption from the nearby Mount Erciyes volcano, Cappadocia's distinctive topography was then further shaped by erosion from wind and rain. What remains now are thousands of limestone towers into which generations of Turks have carved homes, churches, dovecotes, and stables.

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Rogers first discovered this challenging setting, which is also a major tourist attraction and is on UNESCO's World Heritage List, while on vacation 25 years ago, and he has made frequent visits since. In 2005, while on one of these visits, he chose a piece of land—two ridges surrounded by farmland—on which to erect the 12 sculptures that now dot this site and began negotiations with the local Turkish government to secure it and acquire the necessary permits to build the park. He's followed a similar process for each of his undertakings around the world, and it invariably leads to his engagement with the local community in determining the geoglyphs that will adorn each site. The sculptures that make up Time and Space are based on regional mythological subjects, such as an ancient millstone that belonged to the elders of the nearby town of Goreme, an image of a double-bodied lion, an inverted date palm tree, a siren with a human head and the body of a bird, and a horse, derived from an ancient rock carving signifying the importance of this animal to the region—Cappadocia is based on the Persian word *Katpatuka,* which means "Land of the Beautiful Horses."

A sixth geoglyph mimics one that is present in all of his parks. *Rhythms of Life* is based on one of Rogers's early abstract sculptures and, to his mind, embodies the spirit and purpose of all his installations. He has written that this form—a soaring abstraction with ribbonlike lines anchored by a large orb—is a "dynamic structure in space that embodies the changing rhythms of life... reflected in the juxtaposition of shape and line echoing the unpredictable journey through life."

Rhythms of Life and its five counterparts are strategically placed on the sides of the site's ridges so as to be visible as one approaches the park from the main road. There are also eight groupings of monumental basalt pillars and arches placed on peaks along the ridges, which have



OPPOSITE
These three basalt columns, nearly 20 feet in height, are placed in a triangular formation surrounded by a circle of stone. They are metaphors for the eternal cycle of life.

ABOVE
Sentinels consists of eight 20-foot-high basalt columns that are viewed as sentinels of responsibility for generations to come.

the appearance of ancient ruins when seen from the approach below or from the air. On the ground and up close, the illusion continues—are they ancient, are they new? The seminal piece, visible from miles around, is the eponymous *Time and Space,* consisting of 12 pillars arranged in a dramatic Fibonacci sequence with the tip of the tallest column faced in 23-carat gold to reflect the rising sun. According to Rogers, "It is a vision of time and space and the interconnectedness of humanity."

Taken together, these basalt sculptural works depict Rogers's vision of the journey of life, and the titles he has given them chart this path as well. *Yesterday Today Tomorrow,* for example, is a triangular formation of three columns and two arches, while *Predicting the Past* and *Listen* encourage the viewer to consider what has gone before as a context for considering the future. As with many abstract works, each person will come away with his or her own interpretation and understanding of the works' meaning.



ABOVE
Rogers sees this 15-foot-high basalt arch as a transition through time and space.

OPPOSITE AND FOLLOWING PAGES
These geoglyphs are best viewed from one of the many hot air balloons that carry tourists aloft throughout the Cappadocia landscape.

Given its sprawl over this vast hilly, rocky terrain, the park is best seen from the comfortable vantage point of a hot air balloon, a common tourist conveyance throughout the Cappadocia region. Alternatively, the rugged trails that have been cut into the park to allow for the heavy equipment needed to install many of the pieces are suitable for on-the-ground touring by horseback or four-wheel-drive vehicles.

As important as the pieces themselves, though, is something less tangible: Rogers's commitment to deep local involvement, which ensures that the community is a primary beneficiary and supporter of these elaborate and costly undertakings. The employment of hundreds of local workers, often from impoverished backgrounds, at what he describes as "fair wages," which often include food and medical treatment, is as much a part of his legacy as the structures he leaves behind. In Cappadocia, upwards of 600 to 800 locals assisted in erecting his vision, scouring the hillside for rocks that they passed down a human chain to the sites where the geoglyphs were assembled by local stonemasons. In the case of *Rhythms of Life,* which measures more than one mile from end to end, including walls that are eight feet high and several feet thick, this must have been a remarkable sight to witness.

And while one might question the need for any adornment to the magnificent landscapes in which Rogers works, he is quick to point out that every effort is made to use only materials native to the site. "These structures may last for centuries or may slowly erode into their surroundings. For me either outcome is acceptable, as I like to leave these works to the vagaries of time, climate, and the control and care of the local community." His work, he says, is ultimately like everything else we encounter on our way through life—"a moment in time, a speck in space." ●

JAMES GRAYSON TRULOVE, A FORMER EDITOR AND PUBLISHER OF *LAM,* HAS WRITTEN, EDITED, OR PUBLISHED MORE THAN 150 BOOKS ON LANDSCAPE ARCHITECTURE, ARCHITECTURE, ART, AND GRAPHIC DESIGN.

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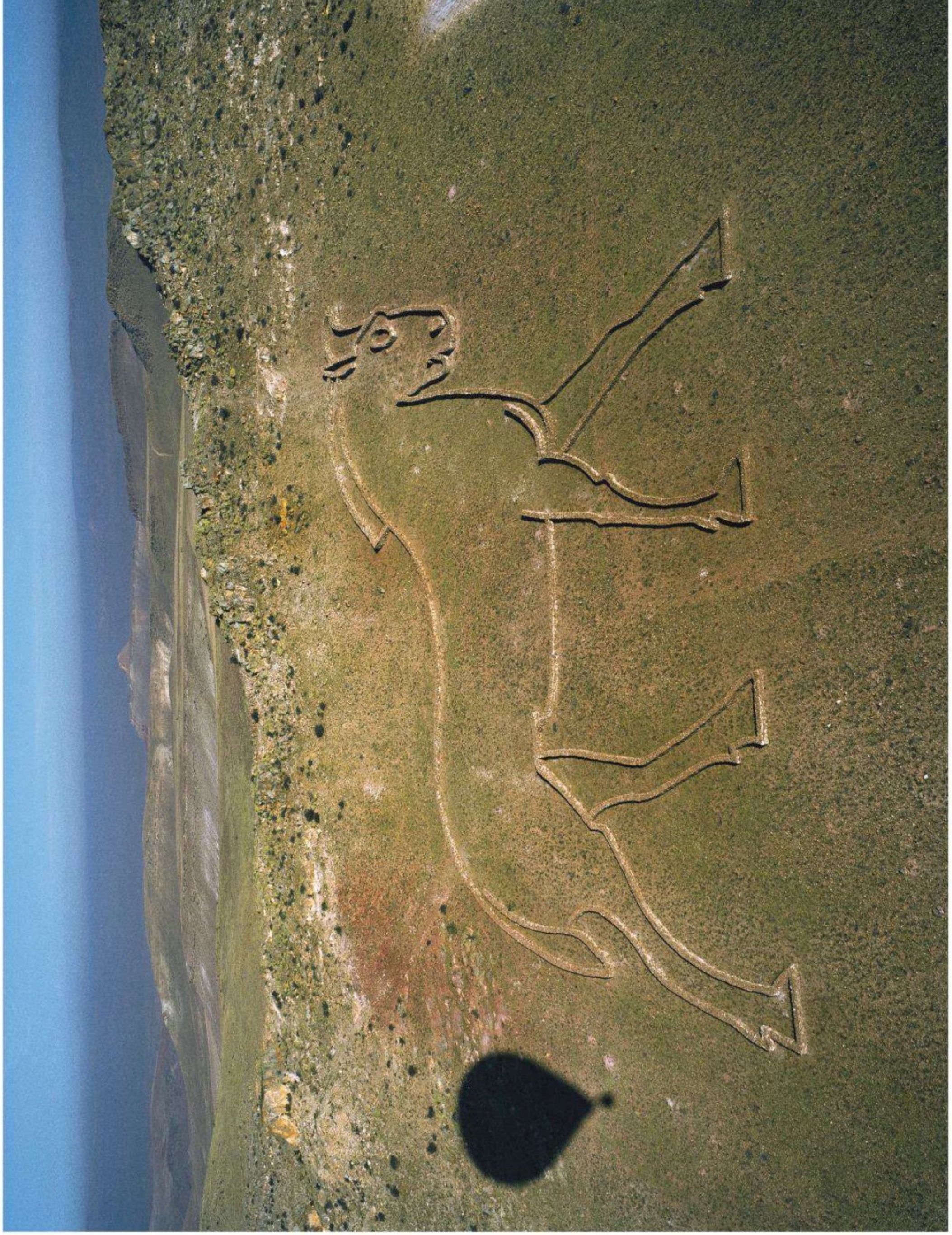


A DAY ON EARTH





SIREN



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THE BACK

THE MAKING OF THE ENGLISH GARDENER: PLANTS, BOOKS, AND INSPIRATION 1560–1660

By Margaret Willes; New Haven and London: Yale University Press, 2011; 336 pages, $45.

What we know now as English gardening began to coalesce into its own during the era of Elizabeth I, when England had some catching up to do with its nearest neighbors in the horticultural arts. The author Margaret Willes, a former publisher for Britain's National Trust, found archived bills to the seminal plantsman John Tradescant the elder on behalf of his employer, Robert Cecil, "for flowers called anemones at 5 [shillings]" from a Dutch nursery. These years, around 1610, are clearly formative. Tradescant also ordered two arborvitaes, which had come to Europe from Canada only about a century earlier. Willes's book, which includes gorgeous color plates from the era, is so heavily populated by curious and covetous plant fetishists that it's hard to believe she's mainly covering a single century.

MASSEY'S COURT AT CLANERCH, DENBIGHSHIRE, MID-17TH CENTURY, ARTIST UNKNOWN

THE BACK / **PLANNING**



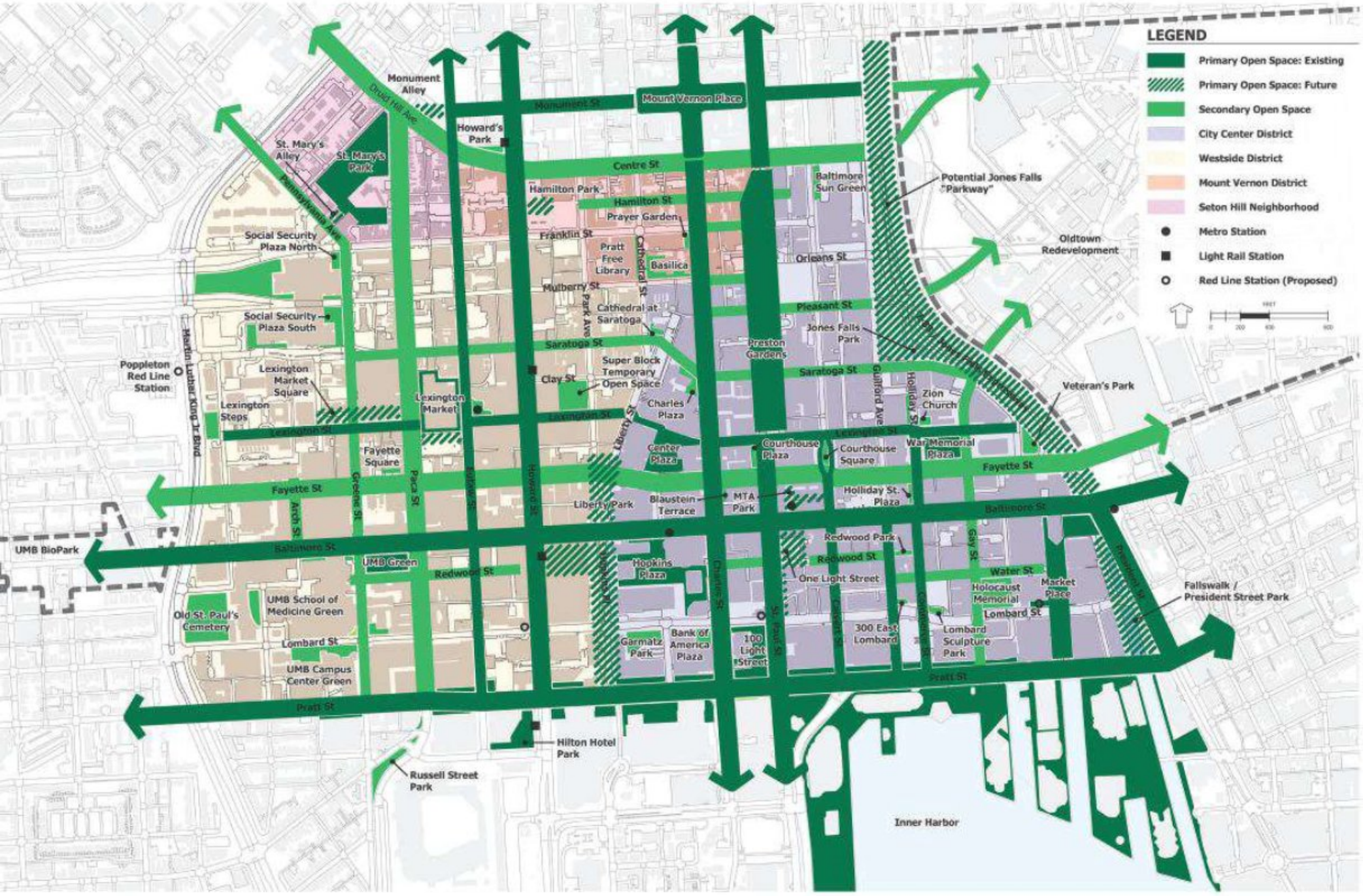
COURTESY MAHAN RYKIEL ASSOCIATES, LEFT; COURTESY DOWNTOWN PARTNERSHIP OF BALTIMORE, RIGHT

START SIMPLE

IN DOWNTOWN BALTIMORE, LEFTOVER SPACES COULD ENLIVEN THE CITY AFFORDABLY—AND WITH MINIMAL RISK.

BY JONATHAN LERNER

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LEFT
The envisioned network of open spaces and corridors weaves activity throughout downtown.

OPPOSITE
Programming music or art could animate the blank plaza at a Metro stop.

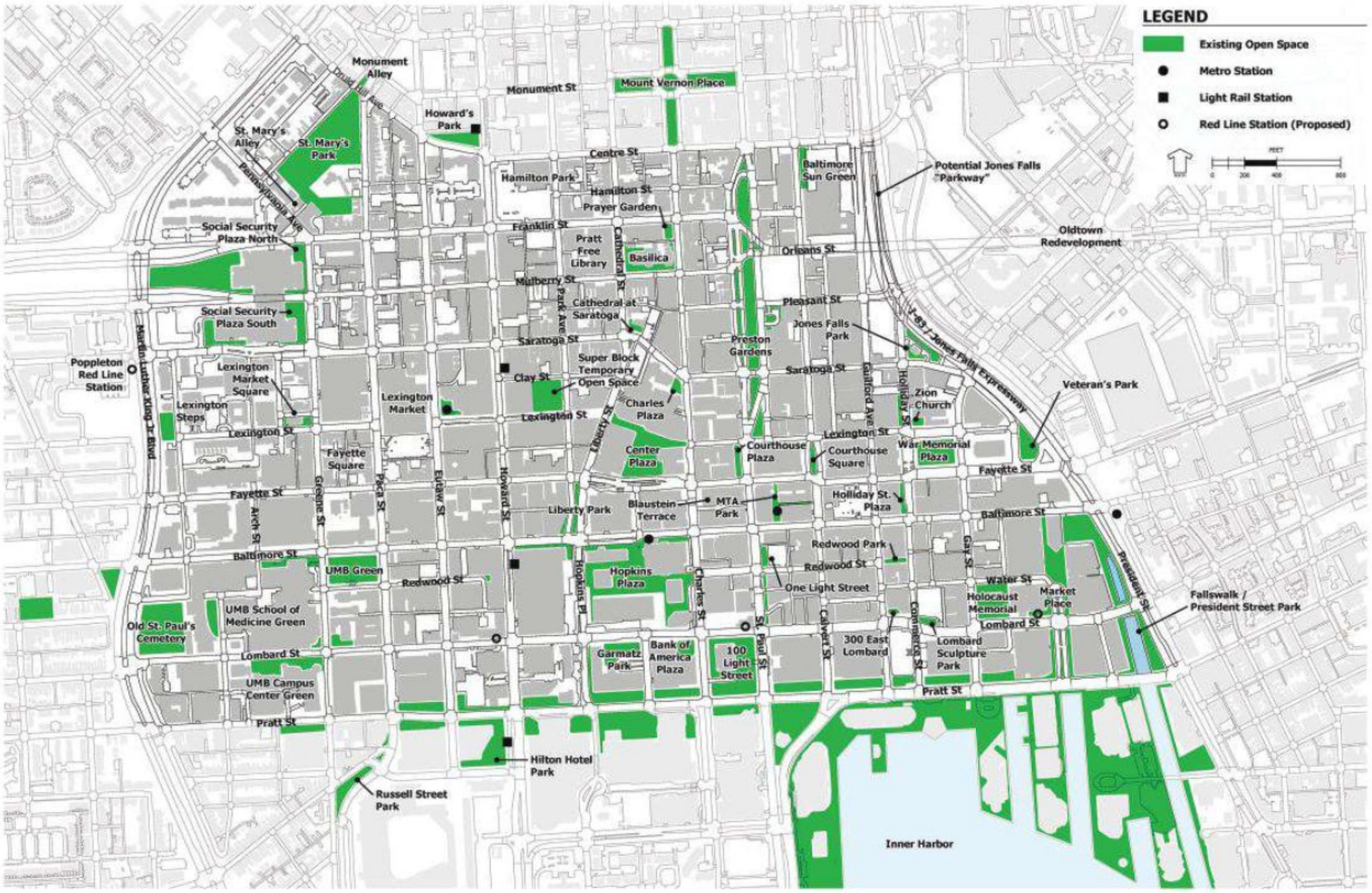
If you know Baltimore only from the TV show *The Wire,* your dominant impression will be of social dysfunction and urban decay. If you've glimpsed the city only through the window of an Amtrak coach, you'll recall row house slums and dead factories. So the apparent health of Baltimore's downtown may surprise you.

Right next to the lively Inner Harbor commercial and entertainment district, downtown Baltimore has a handsome, largely historic building stock. It is compact and well served by transit. On weekdays, plenty of people are out on its sidewalks. And some 4,000 people actually live there; this census tract had the greatest recent population increase of any in the city. By comparison, many American downtowns seem moribund and vacant. So why is there now an $80 million plan to remake streetscapes and pedestrian corridors and to build parks and plazas in downtown Baltimore? And how, when cities are slashing budgets and corporations are shy about investing, can that plan possibly be fulfilled?

The city's downtown is hardy, but it has been eclipsed—for retail, and as an office market—by the redevelopment, begun in the 1970s, of the formerly industrial Inner Harbor, and by the more recent transformation of a nearby warehouse district into a glamorous mixed-use complex called Harbor East. Although the downtown's present housing stock is almost fully occupied, office buildings there have an 18 percent vacancy rate. Businesses have been lured away by those other areas' "new towers with water views and recession-reduced rents," explains Kirby Fowler, president of the Downtown Partnership of Baltimore, a business-district improvement association.

The group's long-range goal is to encourage the trend toward downtown living, including the continuing conversion of disused buildings for residential use, and to enhance the downtown's ability to attract and keep business tenants. What might help? "Compared to the waterfront," says Fowler, "there's a lack of open space." Hence this plan, which aims to achieve the

COURTESY MAHAN RYKIEL ASSOCIATES



TOP
An inventory of existing open spaces revealed the logic of the plan's focus areas.

BOTTOM
Downtown stakeholders joined a placemaking workshop and elaborated on ideas for the plan's focus areas.

Downtown Partnership's goals by making the precinct more walkable and the public realm livelier.

The Downtown Open Space Plan, drawn up for the group by the Baltimore landscape architecture and urban planning firm Mahan Rykiel Associates, in consultation with the Project for Public Spaces and others, is audacious and, at 200-plus pages, full of nuance. Within the 106-block area the Downtown Partnership stewards, the plan identifies nine distinct networks of open spaces and connecting streets, assesses their current conditions, and suggests approaches and alternatives, if not exact prescriptions, for their improvement.

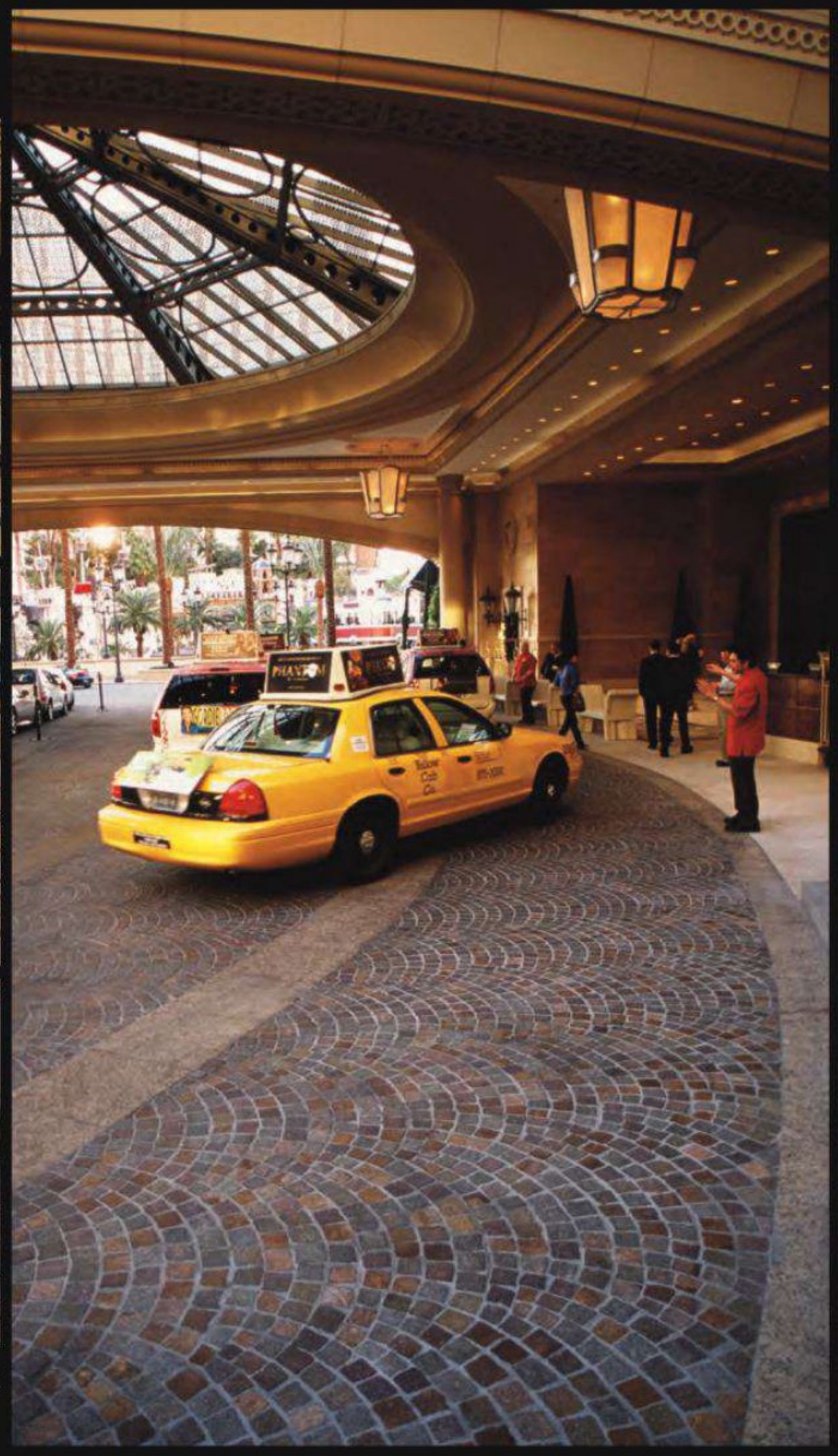
A salient feature of the scheme is its simultaneous short- and long-term perspectives. It proposes simple, cheap, and temporary fixes that can be applied to the various sites almost immediately and can lay the groundwork for more significant, and inevitably costlier, projects later. This approach addresses the realities of the place frankly: Many sites are privately owned. Some may be headed for new construction for which the function, let alone the design, has yet to be determined. And money is tight all around.



So it's not even called a master plan, as Tom McGilloway, ASLA, a landscape architect at Mahan Rykiel, explains. Rather, "it's almost a menu of things that could be done." Modest short-term tactics, McGilloway says, "could be as simple as a property owner sticking umbrella tables out where they don't exist right now." The hoped-for results will be not only immediate improvements, but also "confidence, in the fact that these things can make a difference, to build support for the more intensive, long-term projects."

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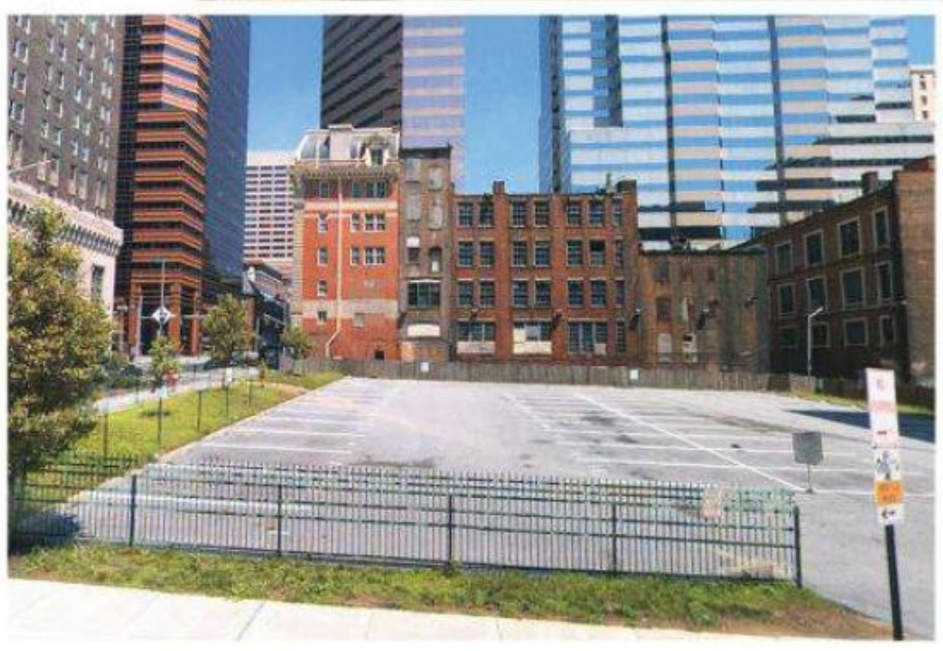
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A property known as One Light Street would be a good example of this phased and flexible approach. This quarter-block parcel has a central location amid buildings occupied mostly by restaurants, hotels, and offices near where downtown and the Inner Harbor converge. Many of the surrounding buildings have historic and architectural value and create a pleasing pedestrian scale. There's already significant foot traffic—but nothing that gets people to stop and engage. One Light Street is just steps from a Metro station, except that direct access is blocked by a row of vacant storefront buildings on its perimeter. Behind a planted buffer, the property is now mostly a surface parking lot; no redevelopment of it is in the works.

The plan's short-term recommendations for changing the space physically—assuming the giving over of the parking space for public use—include installing newsstand and tourist information kiosks; defining an area for food vendors; providing tables and chairs; encouraging adjacent retail establishments to reveal their now largely covered storefront facades and mount attractive window displays; and replacing the low trees and shrubs now in the green buffer with appropriate plantings that would not impede sight lines. Short-term programming recommendations include installing public art, promoting art vending, and encouraging music, both scheduled performances and informal busking. All of these tactics could be quick and cheap; they are low on risk and have worked for many other places.

For the long term, various scenarios are offered for the permanent redevelopment of the site as a park. Some see reuse of unoccupied adjacent historic buildings, while others would replace them with new mixed-use infill or simply add their area to the park. A direct connection to the Metro stop is a possibility, perhaps by tunnel or street-level arcade, as is under-

COURTESY MAHAN RYKIEL ASSOCIATES

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OPPOSITE TOP
A new liner building, at right, would focus on the park.

OPPOSITE INSET
Multiple concepts were proposed for One Light Street, which is now surface parking.

LEFT
New infill and renovated existing buildings yield a more intimate park.

COURTESY MAHAN RYKIEL ASSOCIATES

ground parking for both cars and bikes. For whatever is ultimately built, the stated design guidelines aim to maximize the usability and appeal of the space for pedestrians. Referring to another site for which multiple ideas were also envisioned, McGilloway voices a sentiment that pervades the Downtown Open Space Plan: "It wasn't appropriate to say that any one scenario is the absolute way to go. The whole surrounding context needs to be looked at in more detail." But he adds, "Since the plan emphasized placemaking and programming, those elements remain regardless."

"Programming is vital," says Cynthia Nikitin, vice president of the Project for Public Spaces. "If you cut the ribbon and just walk away, the first people in the space will be the skateboarders, and the second will be the homeless. It's vital in the beginning to establish a positive use. Then, over time, management can reduce the amount of programming because people will start self-programming and bringing their own props."

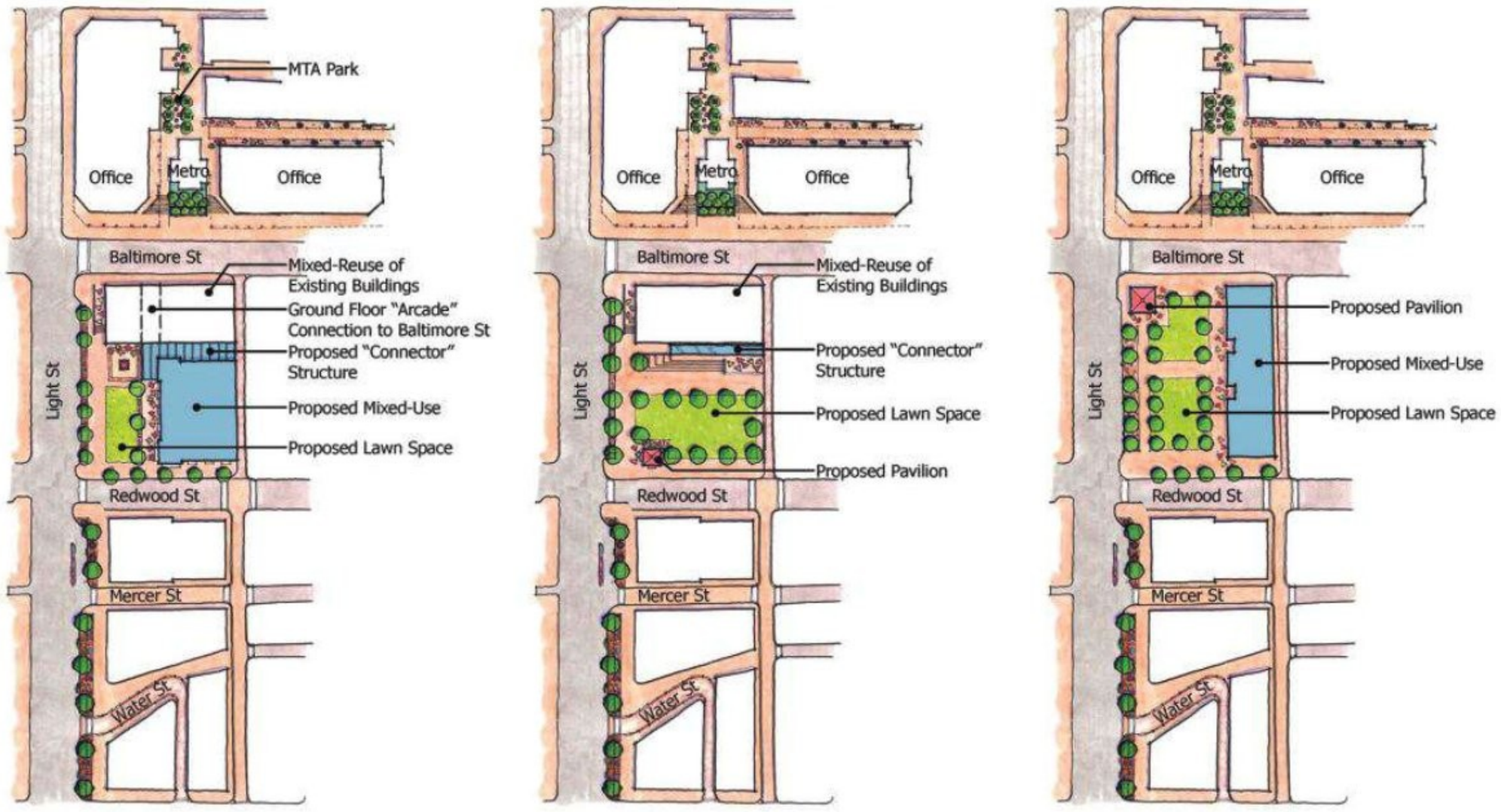
THE PLAN PROPOSES CHEAP, TEMPORARY FIXES THAT CAN BE APPLIED ALMOST IMMEDIATELY TO LAY THE GROUNDWORK FOR MORE SIGNIFICANT, INEVITABLY COSTLIER, PROJECTS LATER.

As to the design of the longer-term undertakings, there is no call for a single style or pattern. "The spaces have different purposes and should have distinct identities," says Nan Rohrer, the Downtown Partnership's vice president for planning. "Their unity will come from their maintenance, the activity, and visibility. The design should support that." McGilloway says it will be imperative to have the Downtown Partnership act as a consistent guide to implementing any development.

Indeed, the Downtown Partnership will necessarily be the prime mover if the plan is to be carried through. One Light Street, after all, is just one among roughly 50 sites and corridors the Downtown Open Space Plan addresses. But Baltimore, like other municipalities, has

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RIGHT
Proposals suggest creating an activity center at well-located, Metro-adjacent One Light Street.



"PROGRAMMING IS VITAL. IF YOU CUT THE RIBBON AND WALK AWAY, THE FIRST PEOPLE THERE WILL BE SKATEBOARDERS...THE SECOND WILL BE THE HOMELESS."

—CYNTHIA NIKITIN, PROJECT FOR PUBLIC SPACES

recently cut budgets and laid off employees. Other constituencies claim, legitimately, that their neighborhoods have urgent, perhaps more urgent, rehabilitation needs than downtown has. The plan complements the city's long-range planning intentions and is expected to move successfully through the approval process. But the city itself is hardly in a position to take the lead in implementing it.

The Downtown Partnership, though, is well placed to do the steering. The plan frequently calls for property owners' cooperation; surely many, if not most, will see the benefit to themselves from the strategic value the plan intends to generate. Partnership members pay a surcharge on their property taxes, which funds the organization; they have volunteered a 50 percent increase in that fee solely to underwrite development and maintenance of open space. A tax increment financing district is planned, which will raise additional revenue from downtown properties that are improved or newly built, to service the debt on bonds that will fund the capital investments. The Downtown Partnership has already had architects and landscape architects draft plans, or at least sketches, for about half of the envisioned projects. It has already hired a staffer to begin implementing some of the programming ideas.

Before and beyond these tangible acts of implementation, the Downtown Partnership plays a more important role: initiating and championing activated, connected public spaces throughout the city center. In doing so, and in commissioning a plan that is both ambitious and flexible, it offers a model for how cities might refine and reenergize their central cores in this time of economic constriction. ●

JONATHAN LERNER WRITES ON ARCHITECTURE, PLANNING, ART, AND DESIGN FOR NATIONAL MAGAZINES. FIND HIM AT *WWW.URBANISTCOMMUNICATIONS.COM*.

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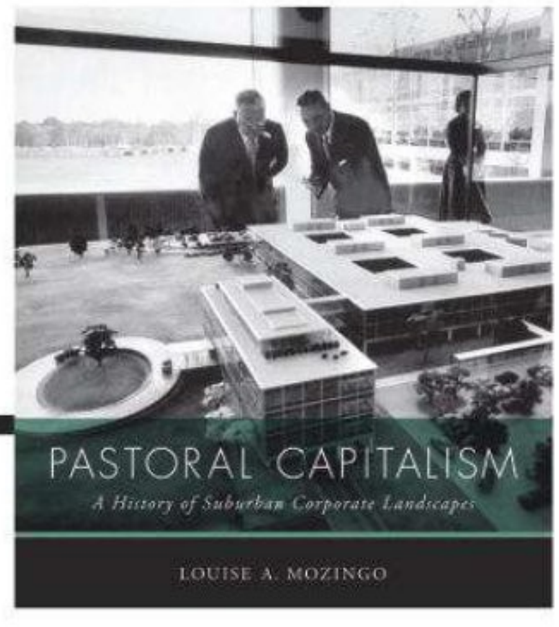
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PASTORAL CAPITALISM: A HISTORY OF SUBURBAN CORPORATE LANDSCAPES



BY LOUISE A. MOZINGO; CAMBRIDGE, MASSACHUSETTS: THE MIT PRESS, 2011; 315 PAGES, $32.95.

REVIEWED BY FRANK EDGERTON MARTIN

Pastoral Capitalism tells the unknown history of suburban corporate landscapes through three alluring landscape ideals that have long enchanted Anglo-American tastes—the "estate," the "campus," and the "park." In telling this new chapter in landscape history, Louise Mozingo, a professor in landscape architecture at the University of California, Berkeley, offers fascinating insights into overlapping stories of technical research, the military-industrial complex, gender roles in the workplace, fear of the city during the 1960s, and the fragmenting effect of the automobile.

ALMOST ALL CAMPUSES RELY FULLY ON CAR COMMUTING AND EAT UP RESOURCES.

Landscape architects should read this book for many reasons, not the least of which is that leaders of the profession—ranging from the Olmsted Brothers office to Peter Walker—played important roles in designing virtually every project discussed. Suburban history is a relatively new field for research, but much has already been written on the rise of housing, manufacturing, and retail commerce outside the urban core. Mozingo tells the less-known story of the rise of corporate workplaces outside traditional downtowns and in separation from the infrastructure of factories where many of today's global corporations such as GE began. She argues that "pastoral capitalism" is a uniquely American invention that came into full force in the 1940s after years of suppressed investment in new building.

One spark for this move to the countryside can be traced to the rise of *managerial capitalism* beginning in the 1920s. "Rather than conferring position based on ownership or nepotism," Mozingo claims at the outset, "corporations awarded management authority to a meritocracy of salaried, professional managers." Thus, talent attraction and retention mattered. Corporate leaders came to believe that with increasing traffic and pollution in core cities, white-collar workers, scientists, and executives might be happier in greener pastures. Yet there were deeper fears that drove leaders of such companies as General Foods and Connecticut General Life to the suburbs—including a desire to separate office workers from unionized locations, a sometimes not-so-subtle desire to exclude minorities from the mainline workforce, and even a fear of nuclear attack focused on city cores.

The corporate campus, the corporate estate, and the office park are three built responses that Mozingo investigates. The corporate campus was largely invented at the Bell Labs in Murray Hill, New Jersey. Designed by Olmsted Brothers in the 1930s and early 1940s, the project evoked a fairly traditional campus model of connecting buildings surrounding a central open space. In terms of sheer numbers of discoveries, we might consider Bell Labs one of the most historically significant corporate landscapes of the 20th century. "By 1948," Mozingo explains, "Bell Labs produced discoveries that sealed the interlinked reputations of its management, scientists, and site. Its scientists invented the transistor and the bit (the basic mathematical unit of electronic information) and fundamentally revolutionized electronic technology and, arguably, human existence." Not bad for just a few years of operation.

But, in terms of corporate design audacity, the real leap into the future came to fruition in 1956 when General Motors opened its new Technical Center near Detroit to centralize numerous advanced operations on one campus. Eero Saarinen developed five complexes of buildings housing styling, engineering, process development, and research along with the Technical Center's administrative offices. Landscape architect Thomas Church sited four weeping willow islands in a 22-acre lake at the center of the campus. He also set out a restrained palette of linear bosques, rectangular lawns, and a forest of trees encircling the site.

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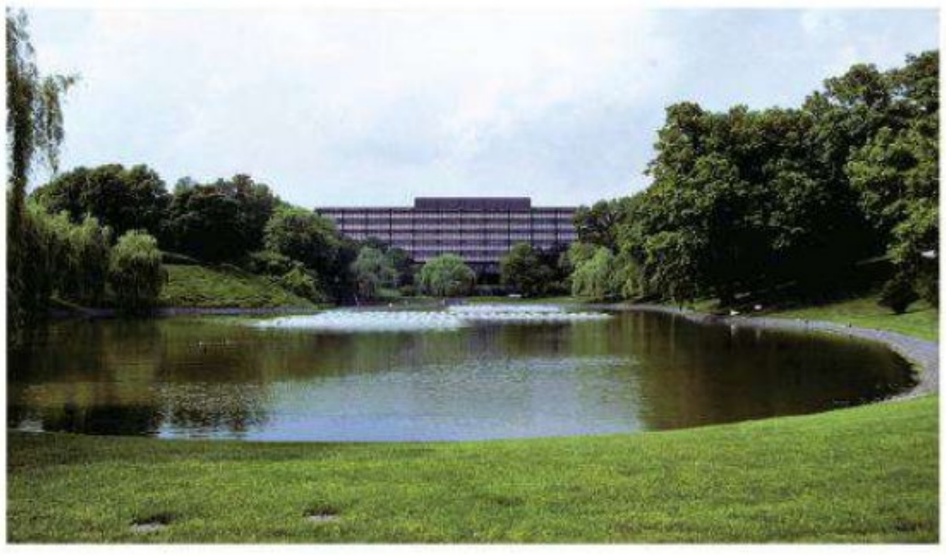
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↘ Mozingo provides a fine description of how the landscape complemented the buildings with contrapuntal vegetative patterns and reflective water. In one of her best passages, she writes that the "design result was cinematic, more art direction than urban design, exhibiting a supremely dynamic sense of space. In the huge site, dramatic vistas were oblique and did not orient to culminating axial viewpoints." This was a new kind of campus meant to be seen from the window of a car (preferably a GM car), a new kind of research city with soaring fountains and a metallic exhibit/pavilion dome serving, perhaps, as a new kind of temple.

From here, the story moves to the great "corporate estates" of the Connecticut General Life campus designed by SOM and the later John Deere headquarters in Moline, Illinois—a collaboration of Saarinen and Hideo Sasaki. Spanning a gentle ravine, the Deere headquarters completely hides surface parking and makes the landscape itself the star of the experience. Initially, Deere's leaders feared that their farmer customers would see the new setting as overly opulent. But, as visitorship to the model exhibit center grew, it was obvious that Saarinen's pioneering use of Cor-Ten steel in the buildings and Sasaki's integration of building and site sent the perfect message: Deere is a growing, high-tech international company that has not forgotten its grounding in midwestern agriculture.



ABOVE
The entry view of the Deere & Company Administrative Center.

Corporate office parks grew out of early experiments by Stanford and other universities to develop sites for research partnerships near their campuses. By the 1970s, Atlanta was ringed by 39 of them, and, as with many regions, they were the sites of the greatest growth in white-collar employment. Microsoft's headquarters in Redmond, Washington, began in an office park that it ultimately took over. The mighty Google's "Googleplex" is also set in an office park, in Mountain Lake, California. Life and death come fast to today's technology companies, and many new facilities are designed with "exit strategies" in mind. The oldest of Google's buildings date to 1997, when they were built as research and development facilities for the late SGI (Silicon Graphics Incorporated).

As I read this background and viewed the Terraserver photo in chapter 6, a flash of recognition struck me. I visited this former SGI campus with its sharp-angled plazas designed by SWA shortly after it opened to write a feature story for *LAM*. SGI was thriving then, and "Google" was not even a popular word, let alone a verb.

Mozingo's lasting message is that even as corporations are merging, vanishing, and evolving ever more quickly, our paradigms for corporate site plans are largely unchanged over the past 60 years. From Sprint near Kansas City to Pepsico in Purchase, New York, both of which I have also covered for *LAM*, buildings are sited around courts, ringed by parking, and set off from the thin suburban growth by open lawns and berms of trees.

Most headquarters are entirely closed to the public yet provide a tranquilizing sense of peace for their employees even as they sometimes manage environmentally destructive operations around the world. Almost fully reliant on car commuting and set in campuses the size of small colleges, they are also highly resource consumptive. Mozingo believes that we have descended from the pastoral landscapes for community betterment proposed by Olmsted to a new kind of quiet illusion that she calls "corporate solipsism." She argues that corporations might "ask themselves whether an unquestioned 19th-century taste for retreat and verdant isolation applied to the workplace is the way forward on a planet of perilously compromised resources."

But this sounds more like a landscape architect's sensible plea for reason than one that makes bottom-line sense to stockholders. *Pastoral Capitalism* could be much more forceful in its conclusions and provocations. The forces of secrecy and isolation that drive corporations behind green lawns are also those arousing the Occupy Wall Street movement today. Lack of transparency and glaring social inequity cannot be concealed forever behind a nice facade, even if it is LEED certified.

It has always been fairly easy to disparage suburban workplaces as "unsustainable" or "homogeneous." But a real critique can only happen when we begin to understand the interwoven stories of business and design innovation that created the pastoral capitalism we know today. Though far from complete, this book marks a beginning of such historic understanding. ●

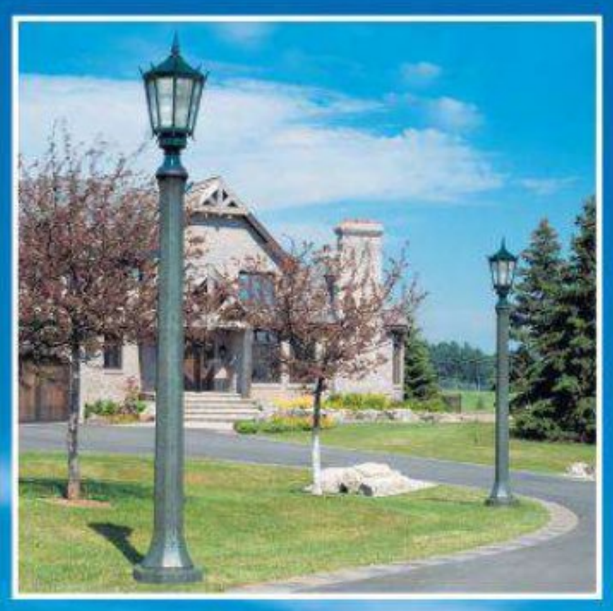
FRANK EDGERTON MARTIN IS A LANDSCAPE HISTORIAN, CAMPUS PLANNER, AND REGULAR CONTRIBUTOR TO *LANDSCAPE ARCHITECTURE MAGAZINE*.

LOUISE MOZINGO



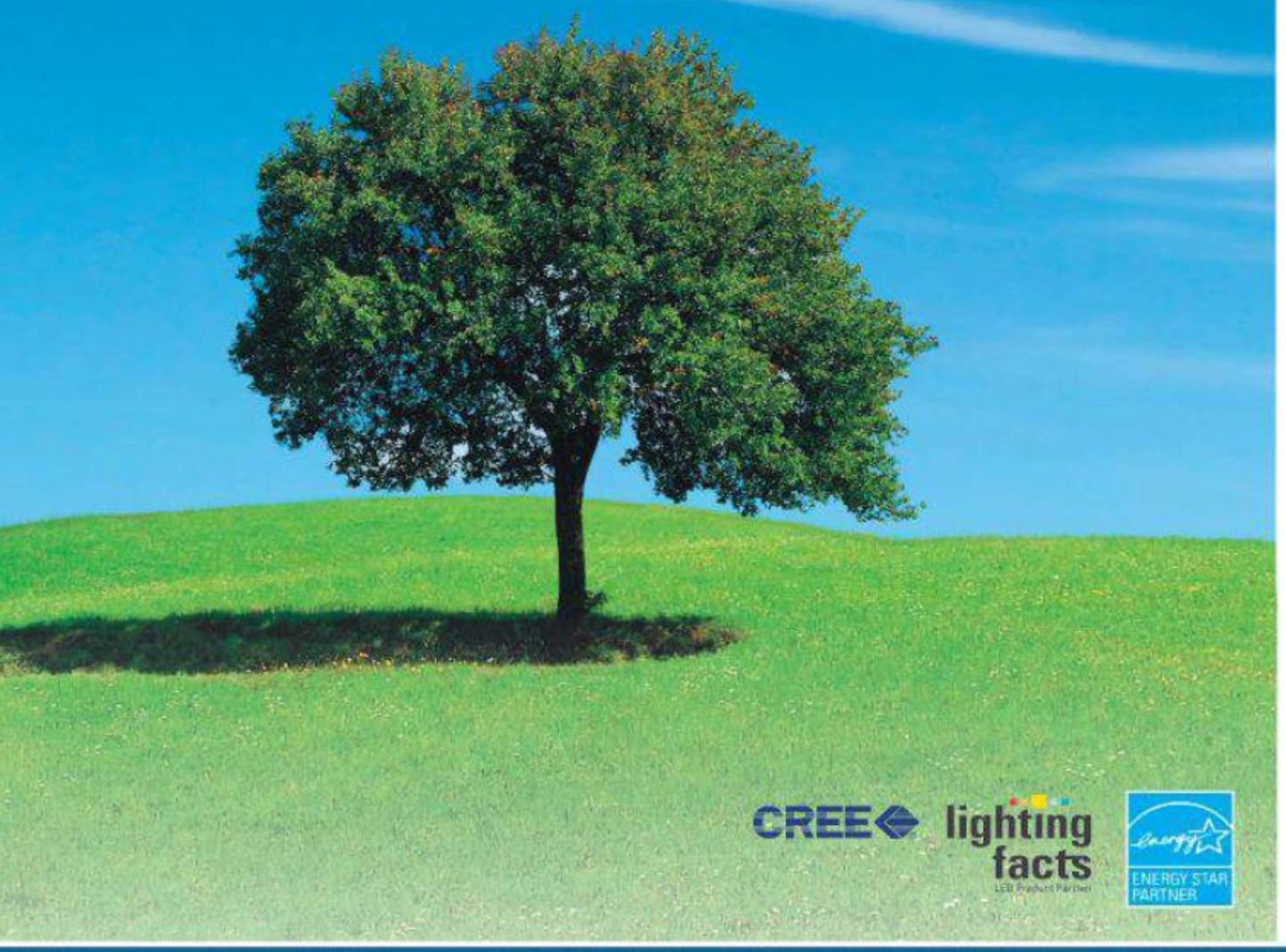
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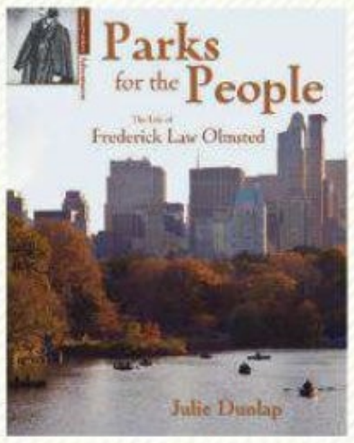
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HIGH LINE: THE INSIDE STORY OF NEW YORK CITY'S PARK IN THE SKY

BY JOSHUA DAVID AND ROBERT HAMMOND; NEW YORK: FARRAR, STRAUS, AND GIROUX, 2011; 339 PAGES, $29.95.

This is the story of how two ordinary New Yorkers led the transformation of a derelict elevated railway into a beloved new public park. Joshua David and Robert Hammond knew nothing about urban planning when they cofounded Friends of the High Line in 1999; they just knew they wanted to save the High Line from destruction. Both received the Jane Jacobs Medal in 2010 for their efforts. The sleek paperback tells the story in two parts—first a chronological narrative and then photographs. Any fan of New York or of urban rebirth will find it compelling.



PARKS FOR THE PEOPLE: THE LIFE OF FREDERICK LAW OLMSTED

BY JULIE DUNLAP; GOLDEN, COLORADO: FULCRUM, 2011; 112 PAGES, $12.95.

This biography of Frederick Law Olmsted is part of a series of books on "conservation adventurers," written to appeal to children in grades 4 through 8. It focuses on "Fred's" childhood, his crazy leaps from one career to another, his passion for creating parks that would serve all people, and his role in the state and national parks movements. Looking for a way to celebrate National Landscape Architecture Month in April? Donate a copy to your local library! Every primary school library in America should own this book.



FIELD GUIDE TO SOFTSCAPE

BY LEONARD J. HOPPER, FASLA; HOBOKEN, NEW JERSEY: JOHN WILEY & SONS, 2011; 420 PAGES, $75.

At 8.5 by 5.2 inches with a tough, plastic-coated cover, this book is meant to accompany landscape architects out onto sites as a ready reference to soils, stormwater issues, planting, turf, and irrigation. Each topic has a section on assessing site conditions, acceptable practices, and practices to avoid. This new addition to *Wiley's Graphic Standards Field Guide* series should be a useful reference for designers.

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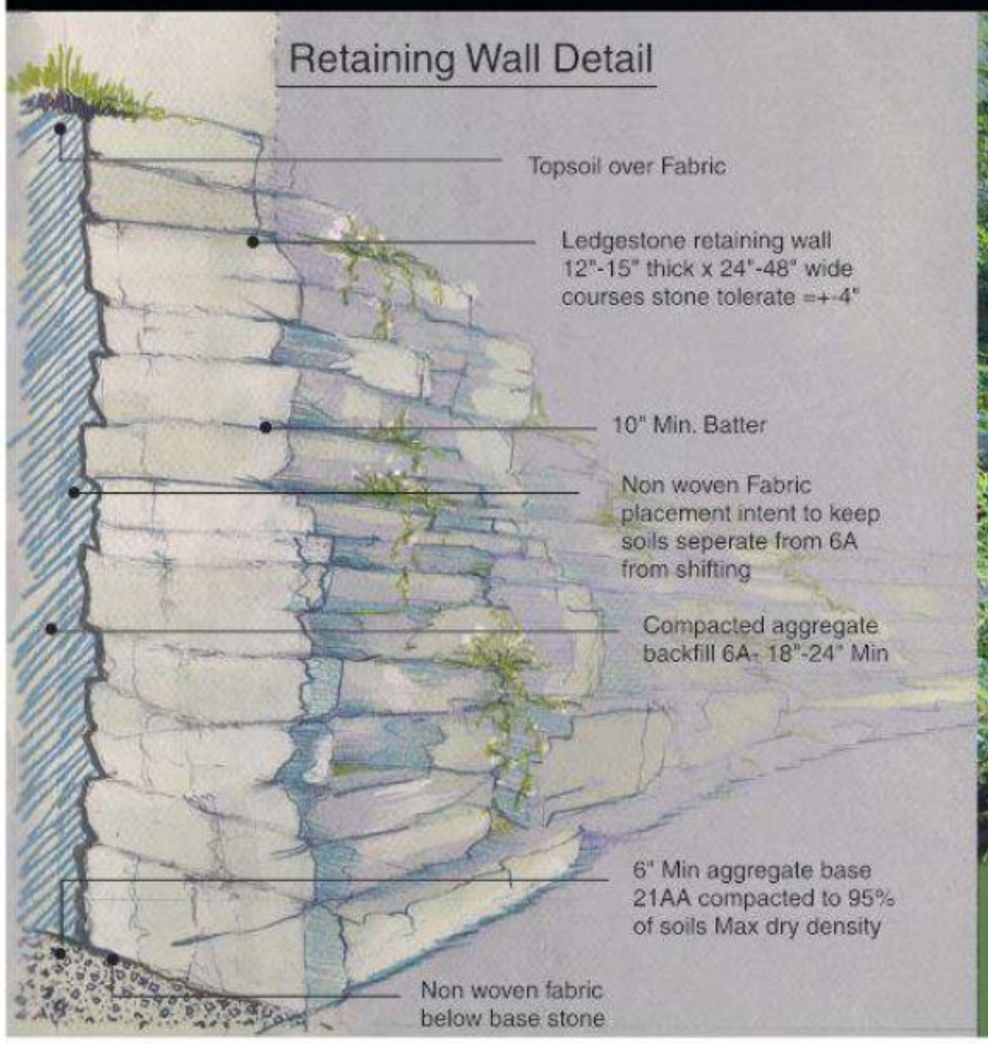
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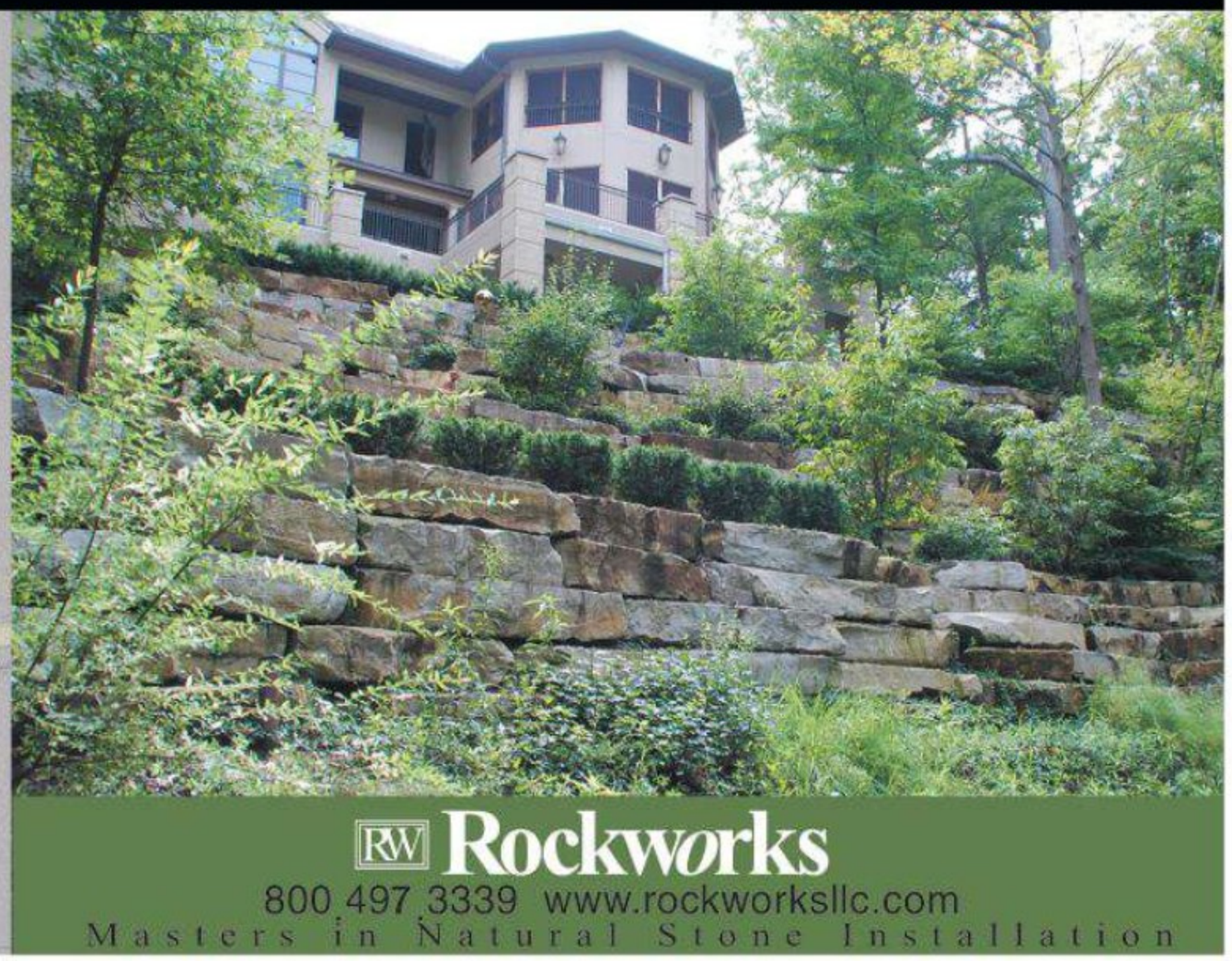
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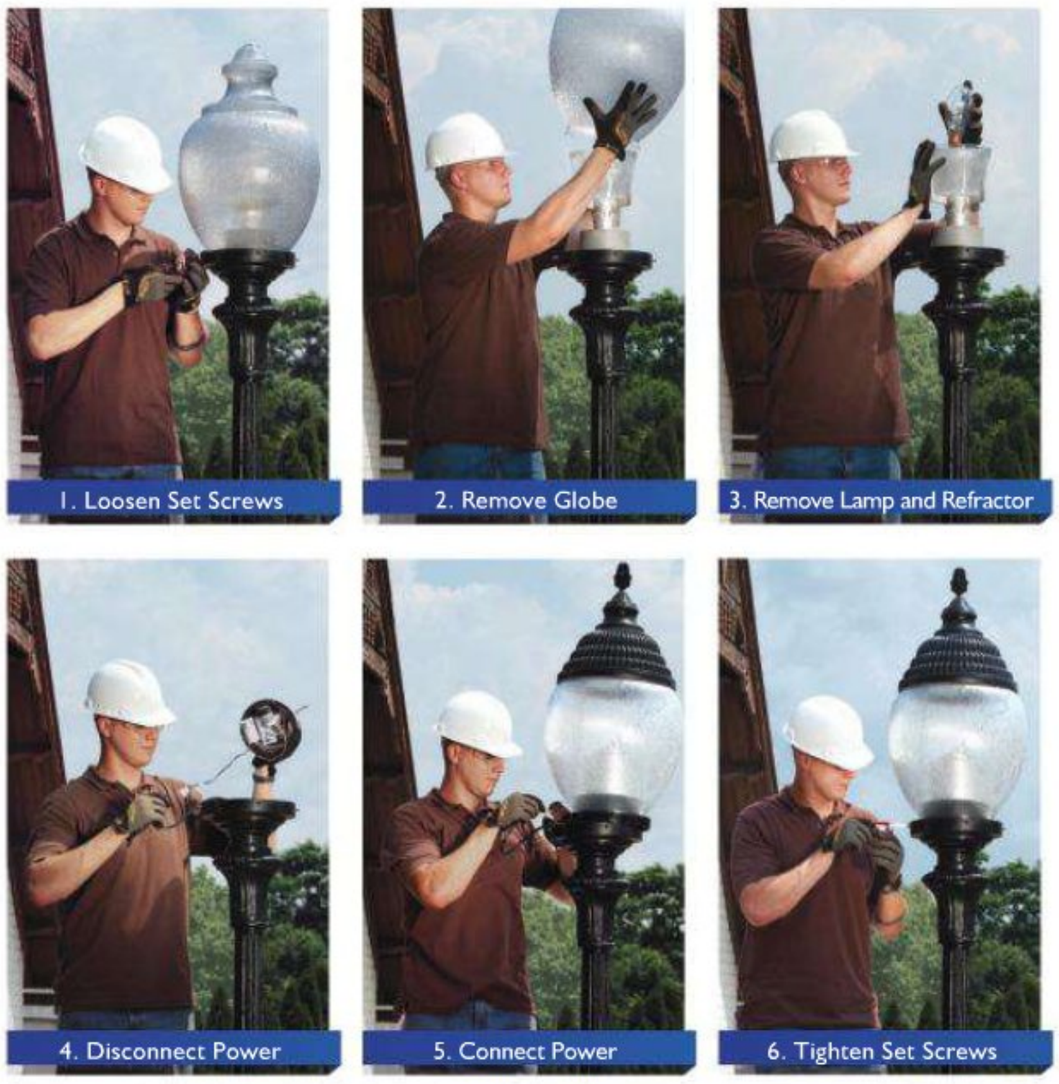
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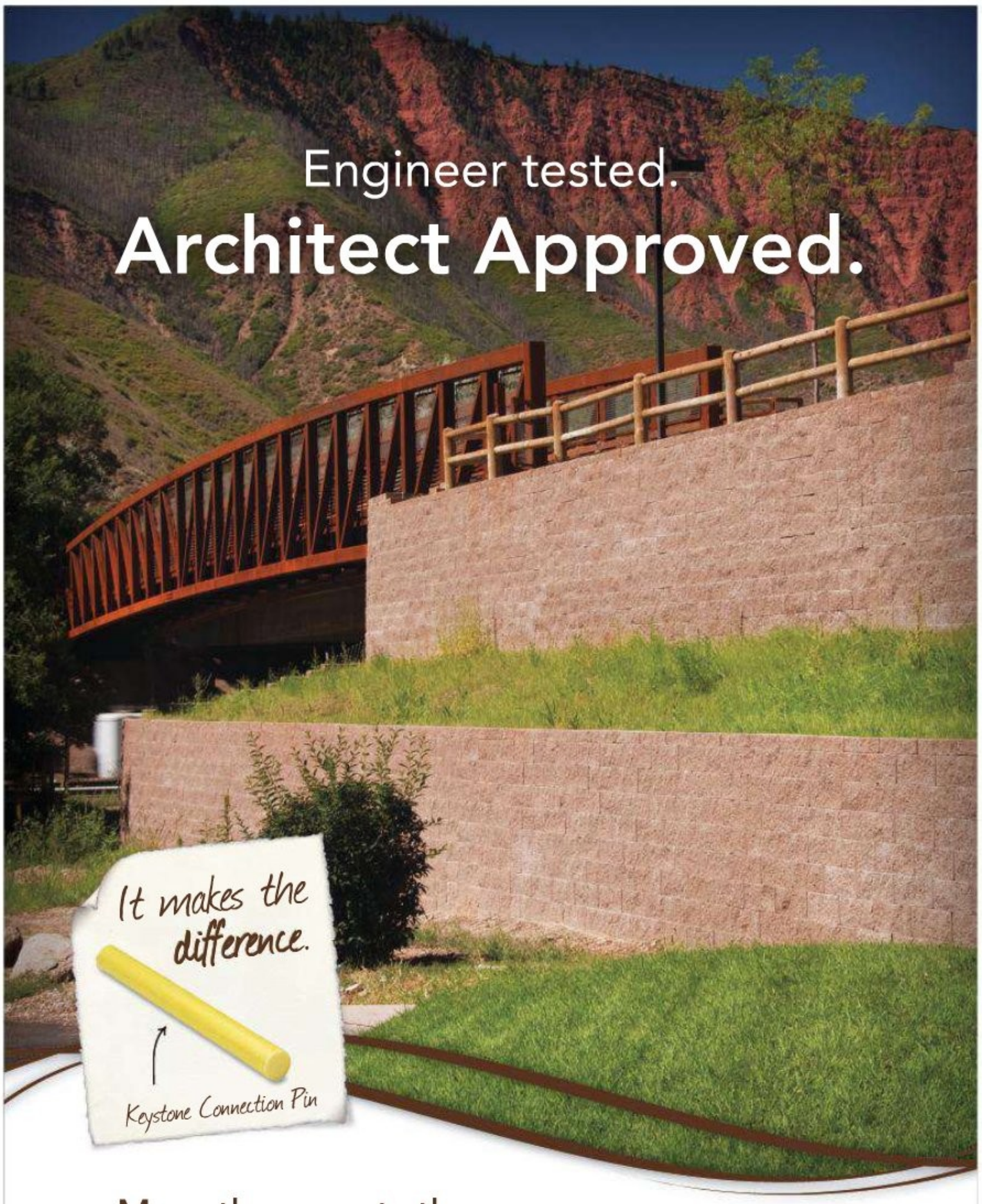
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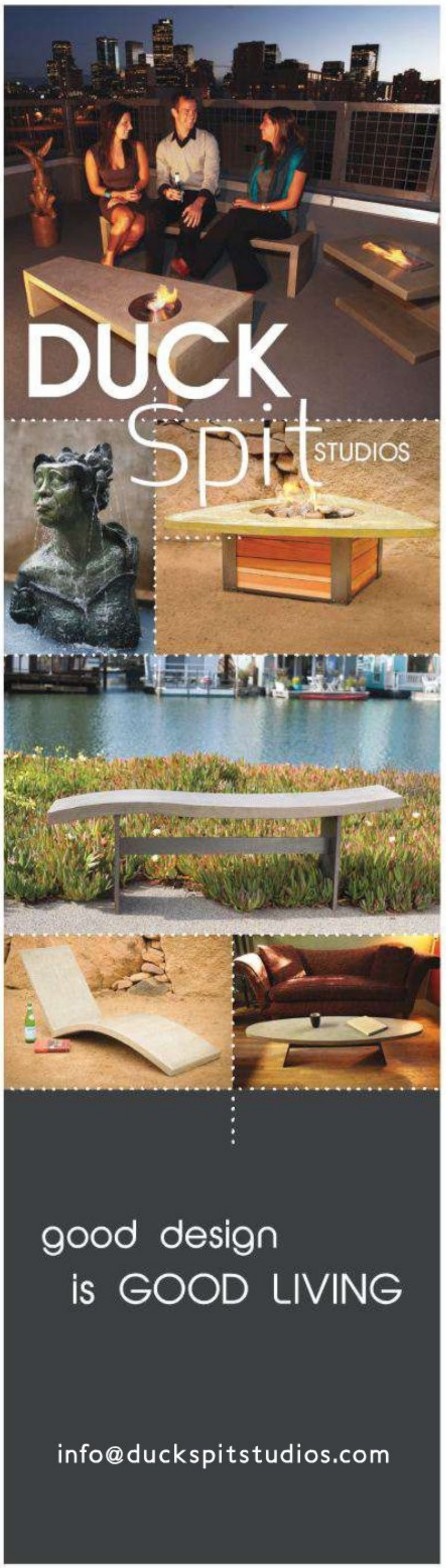
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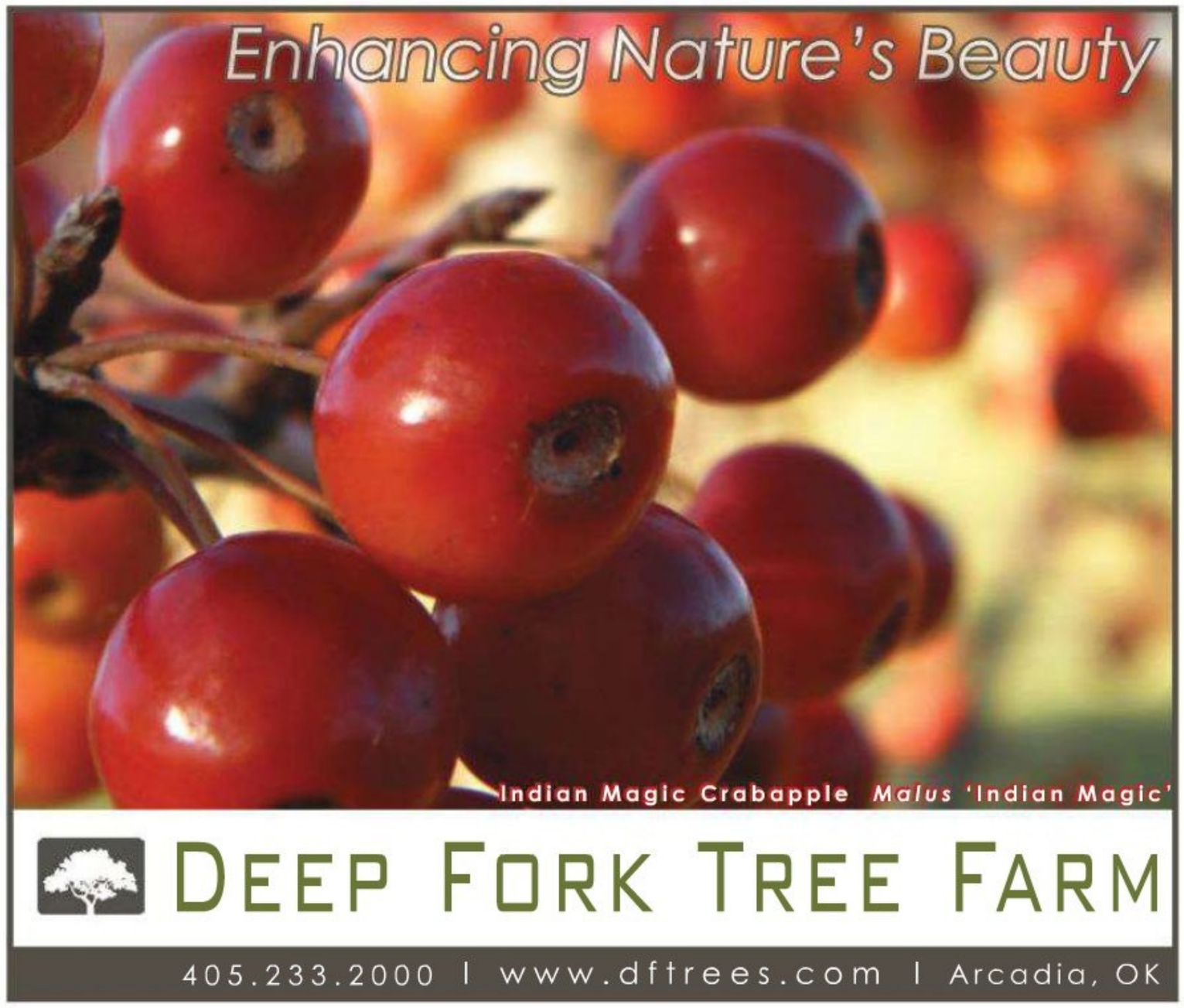
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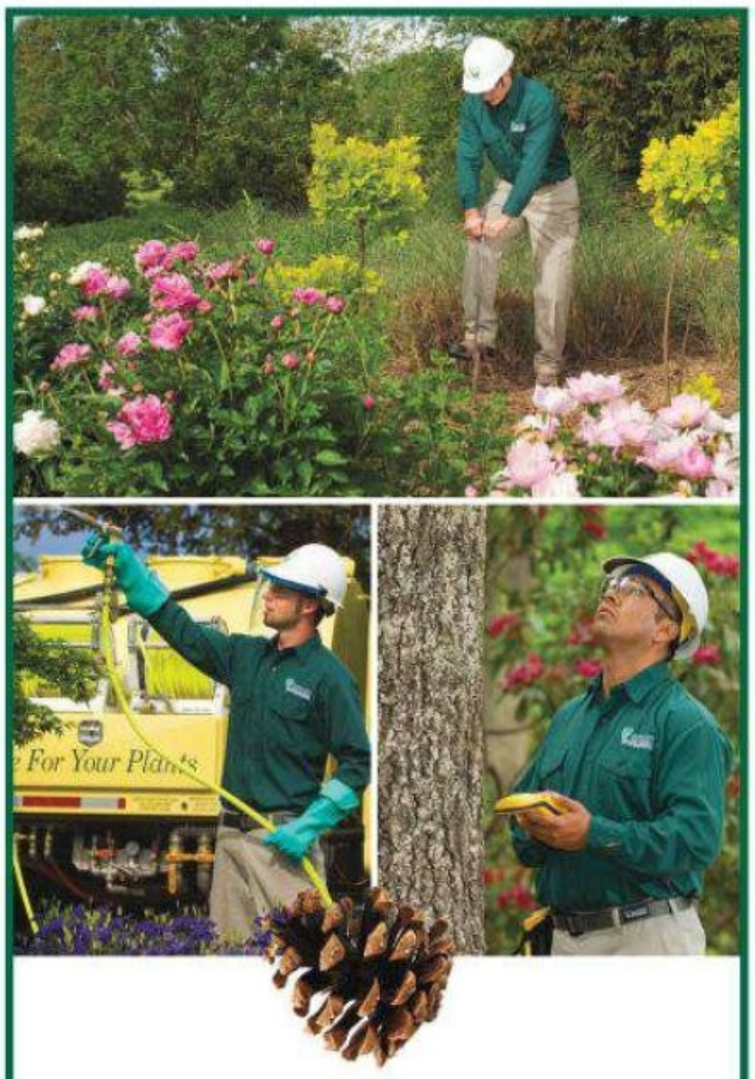
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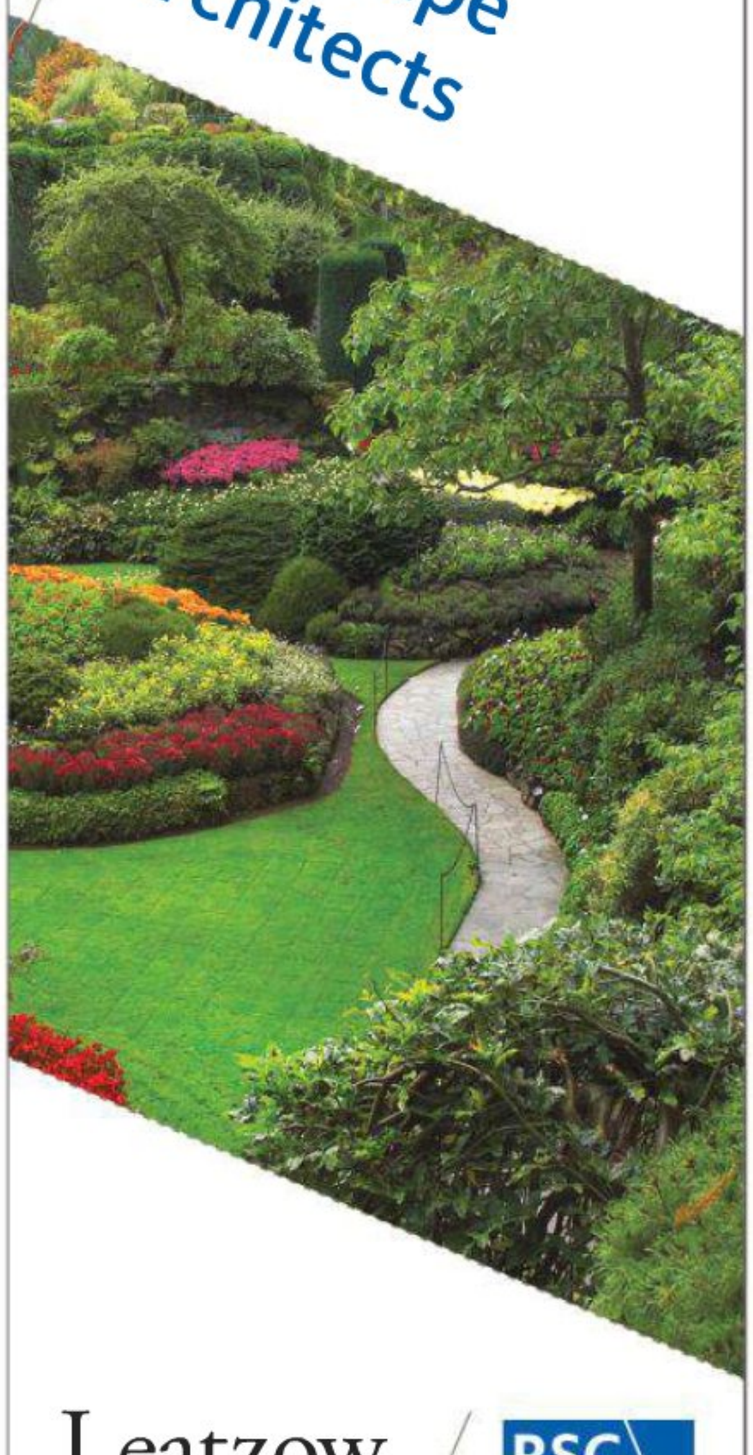


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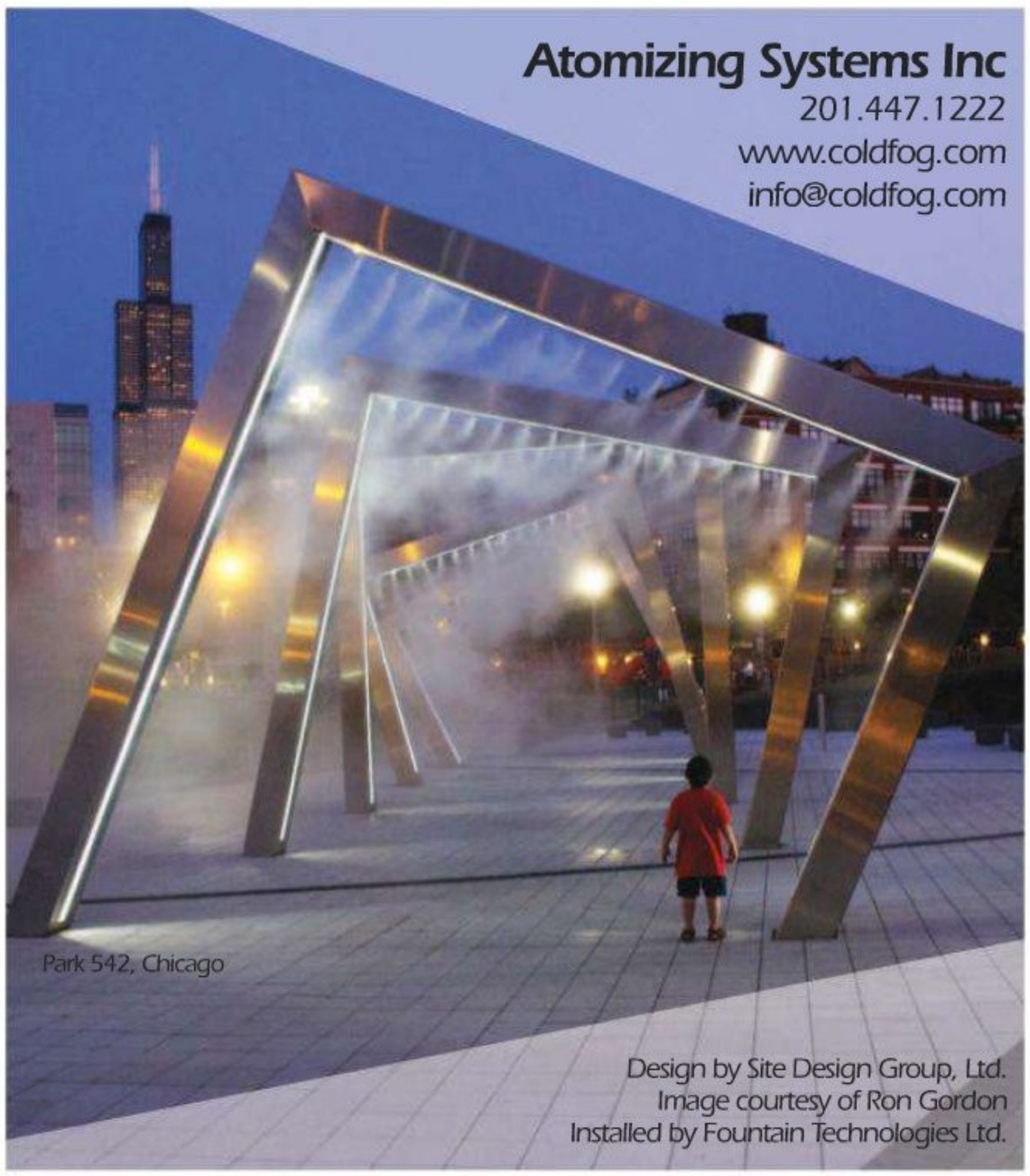
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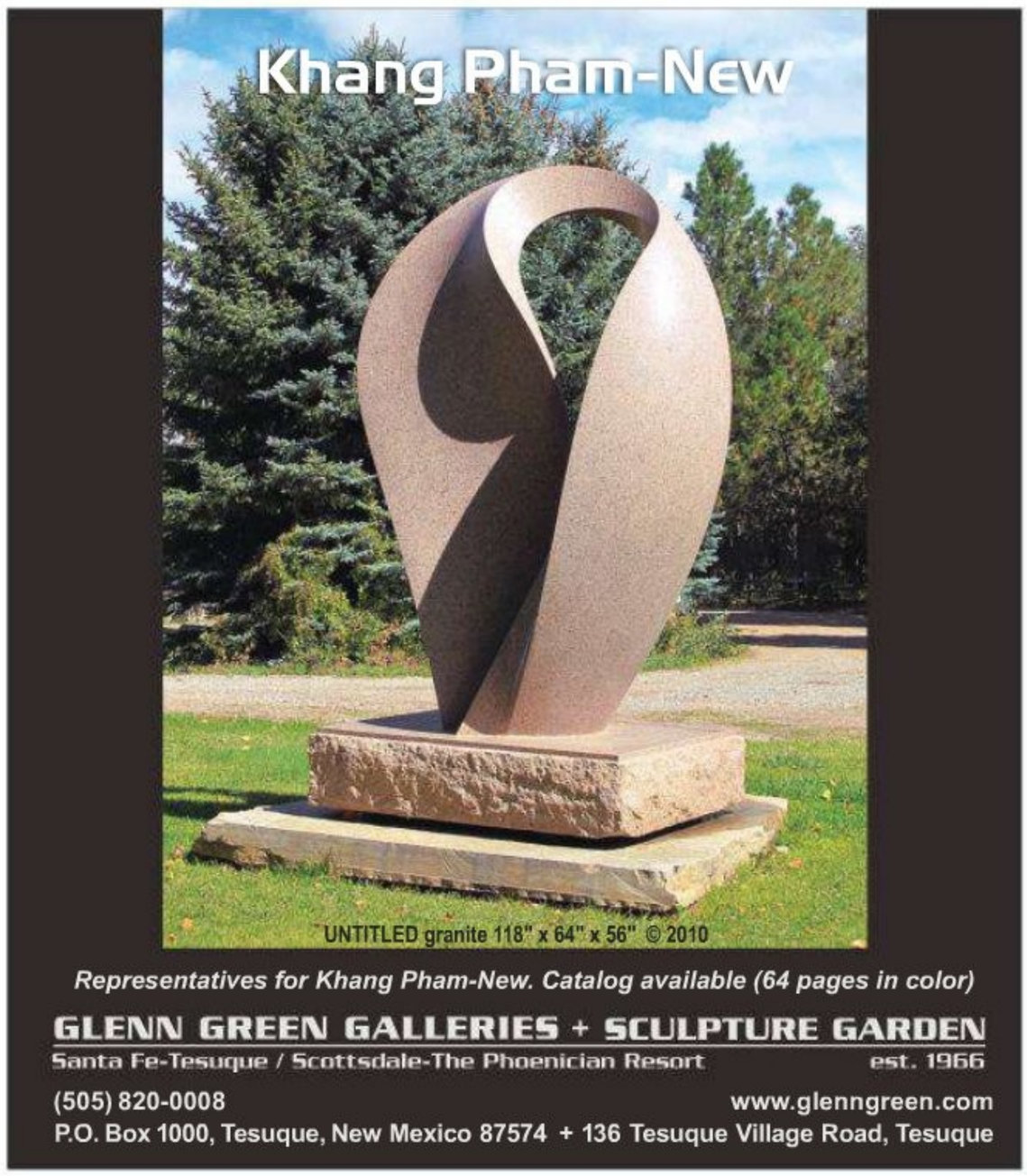
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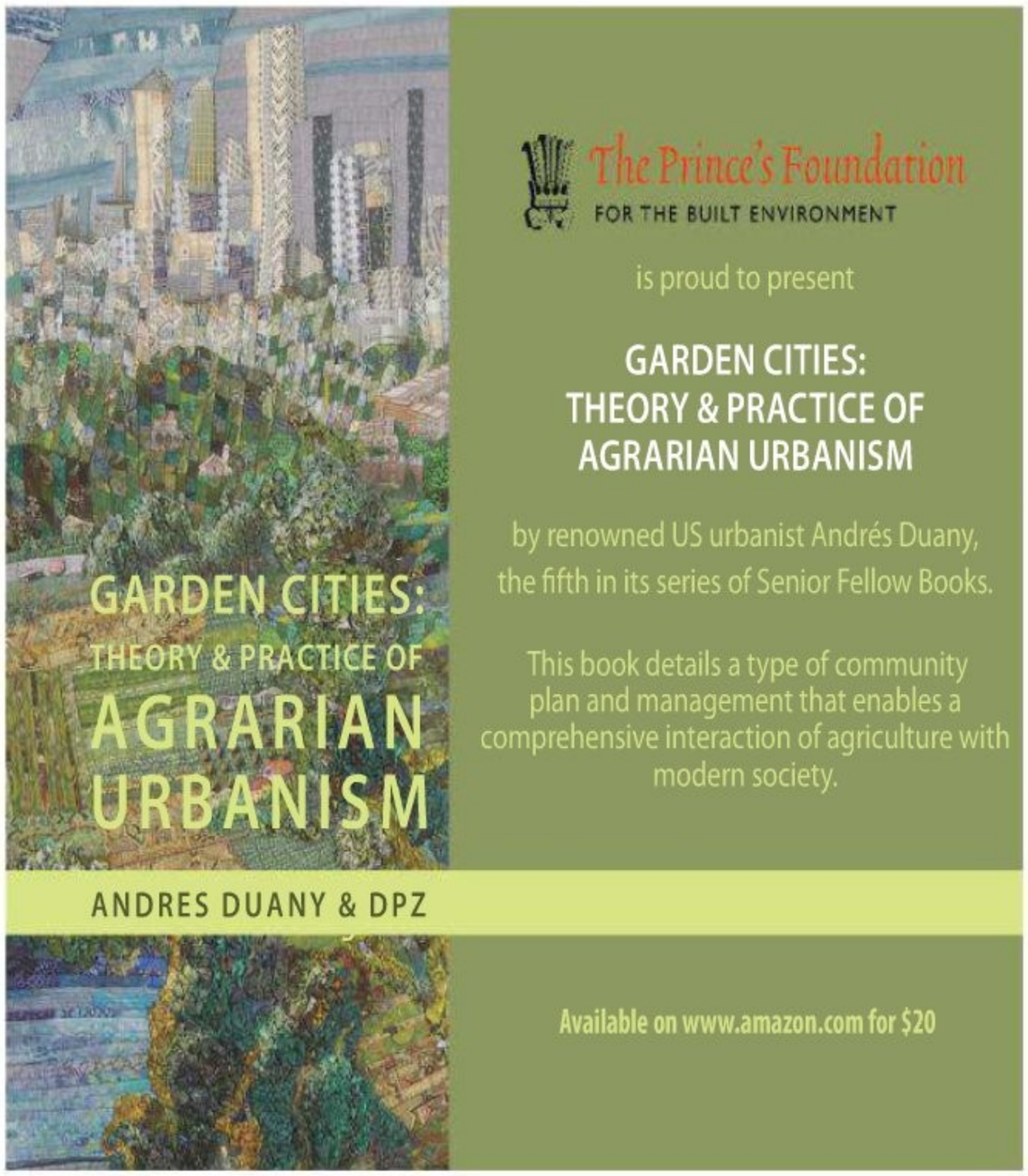
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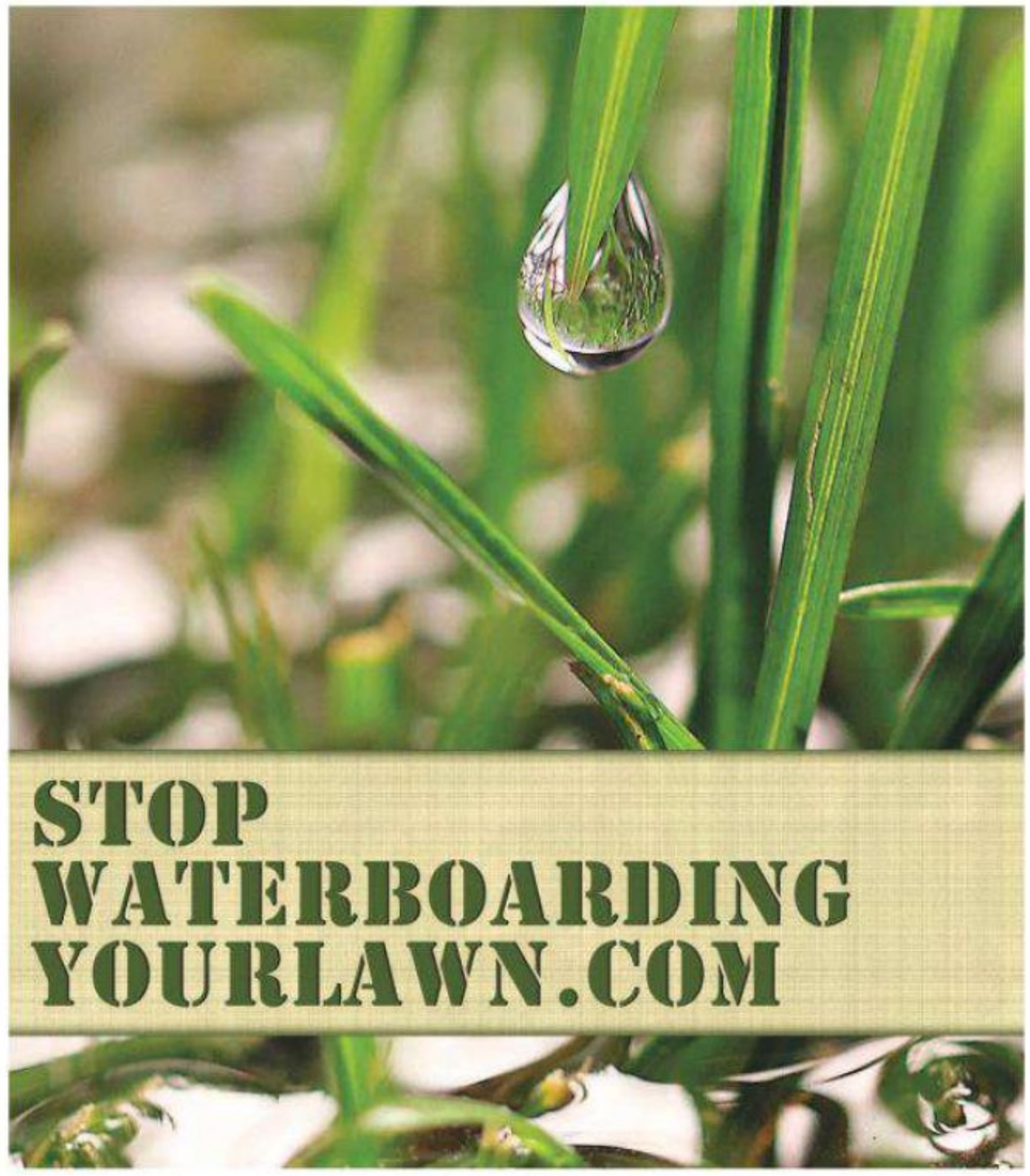
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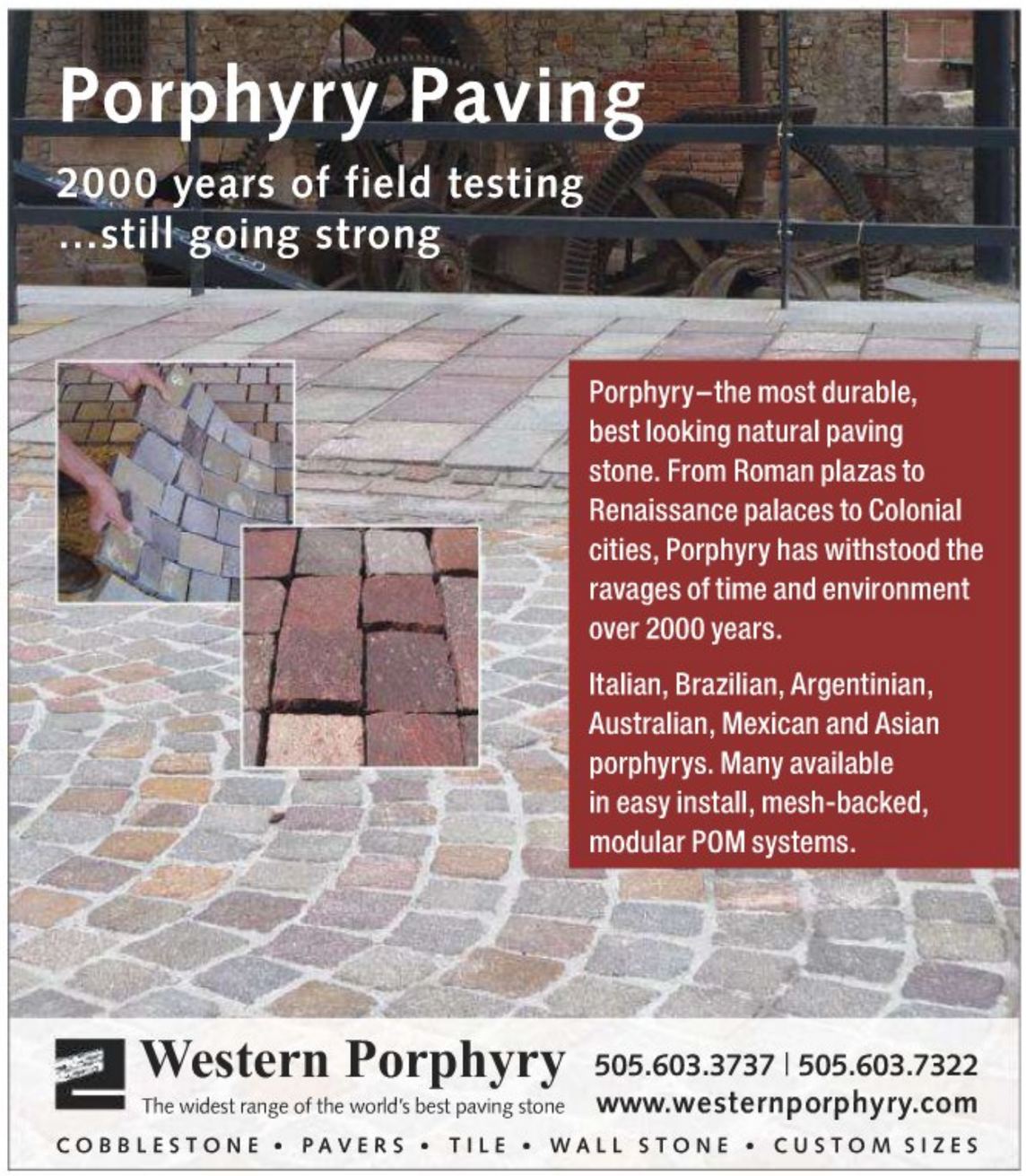
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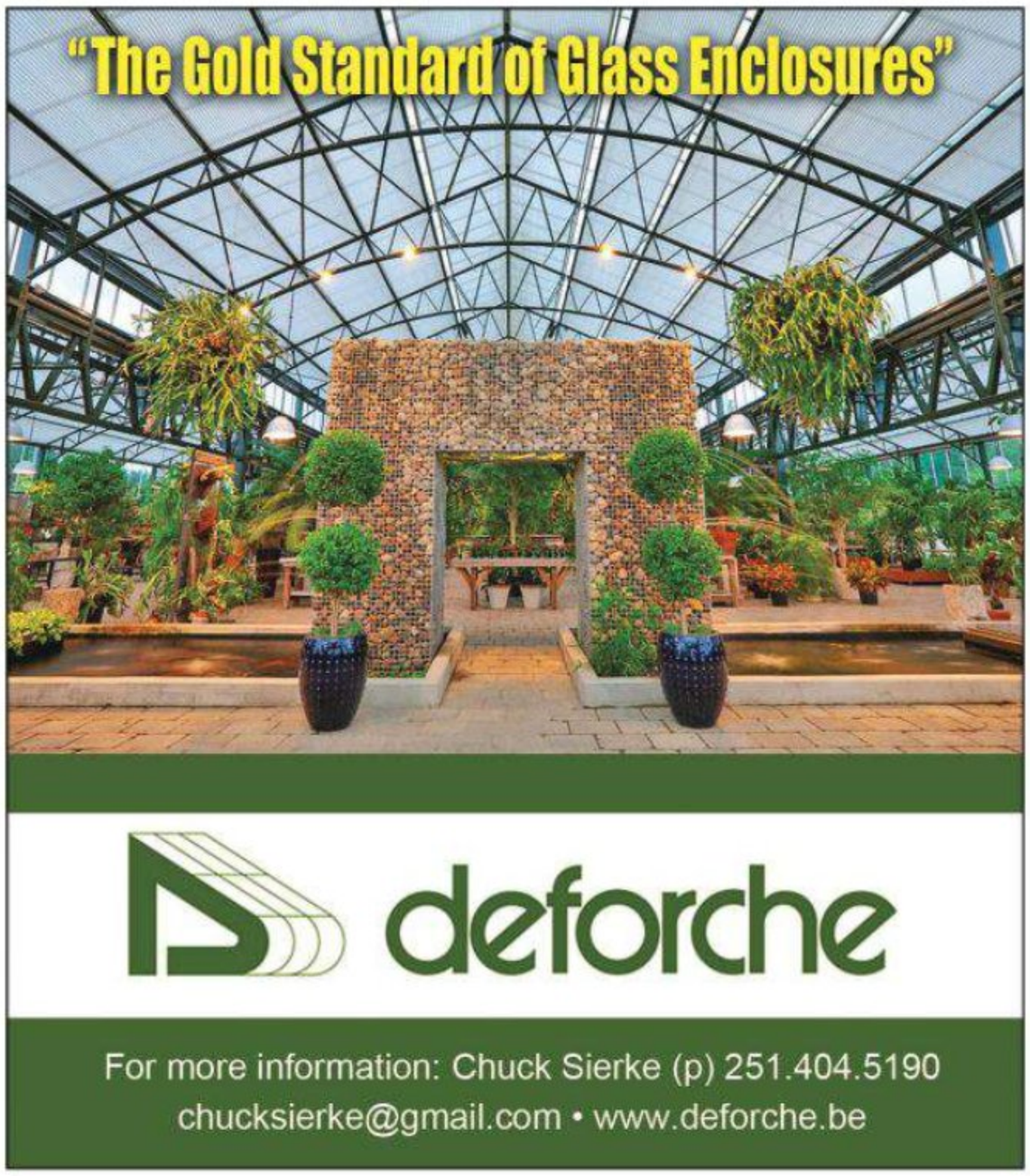
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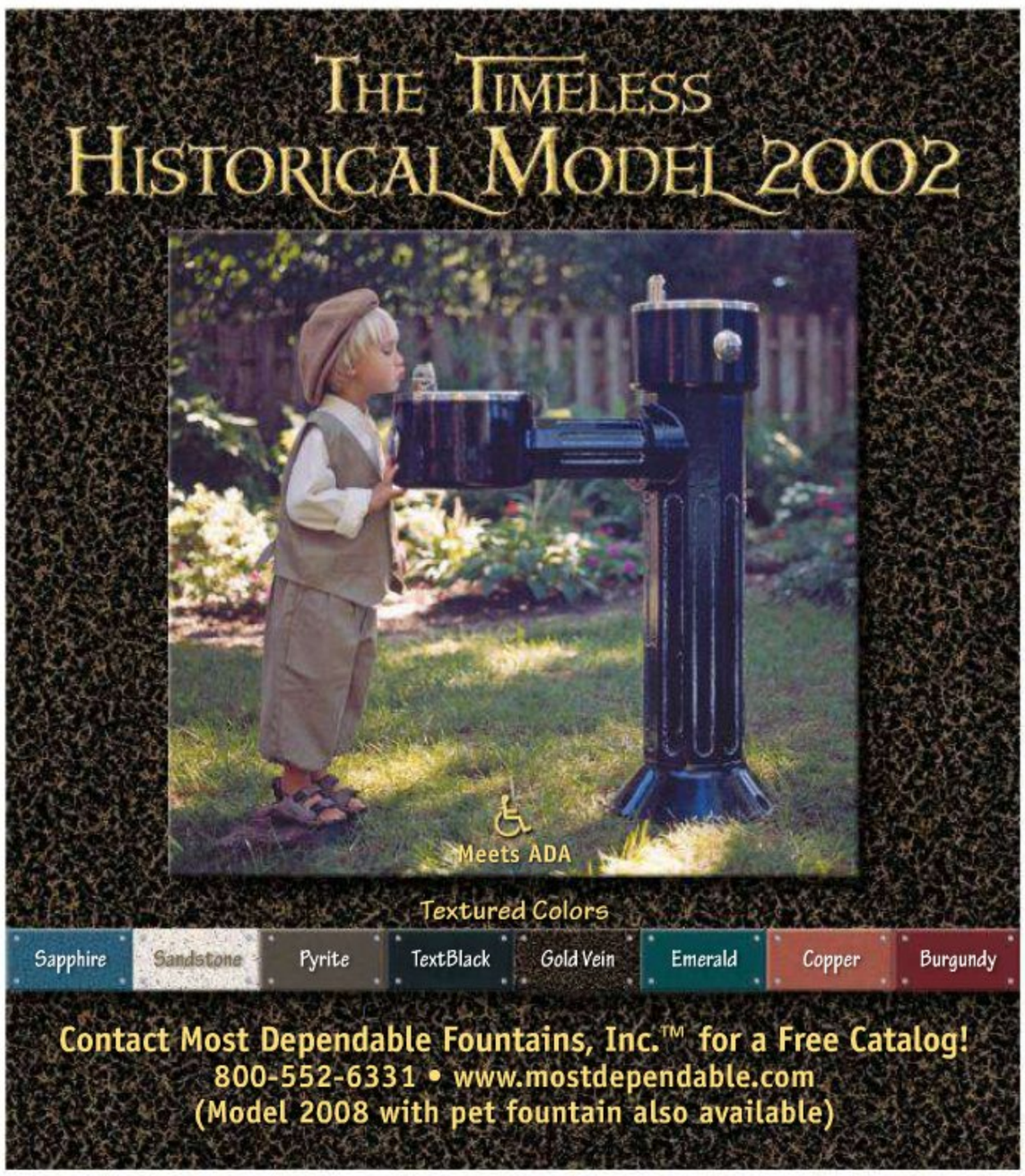
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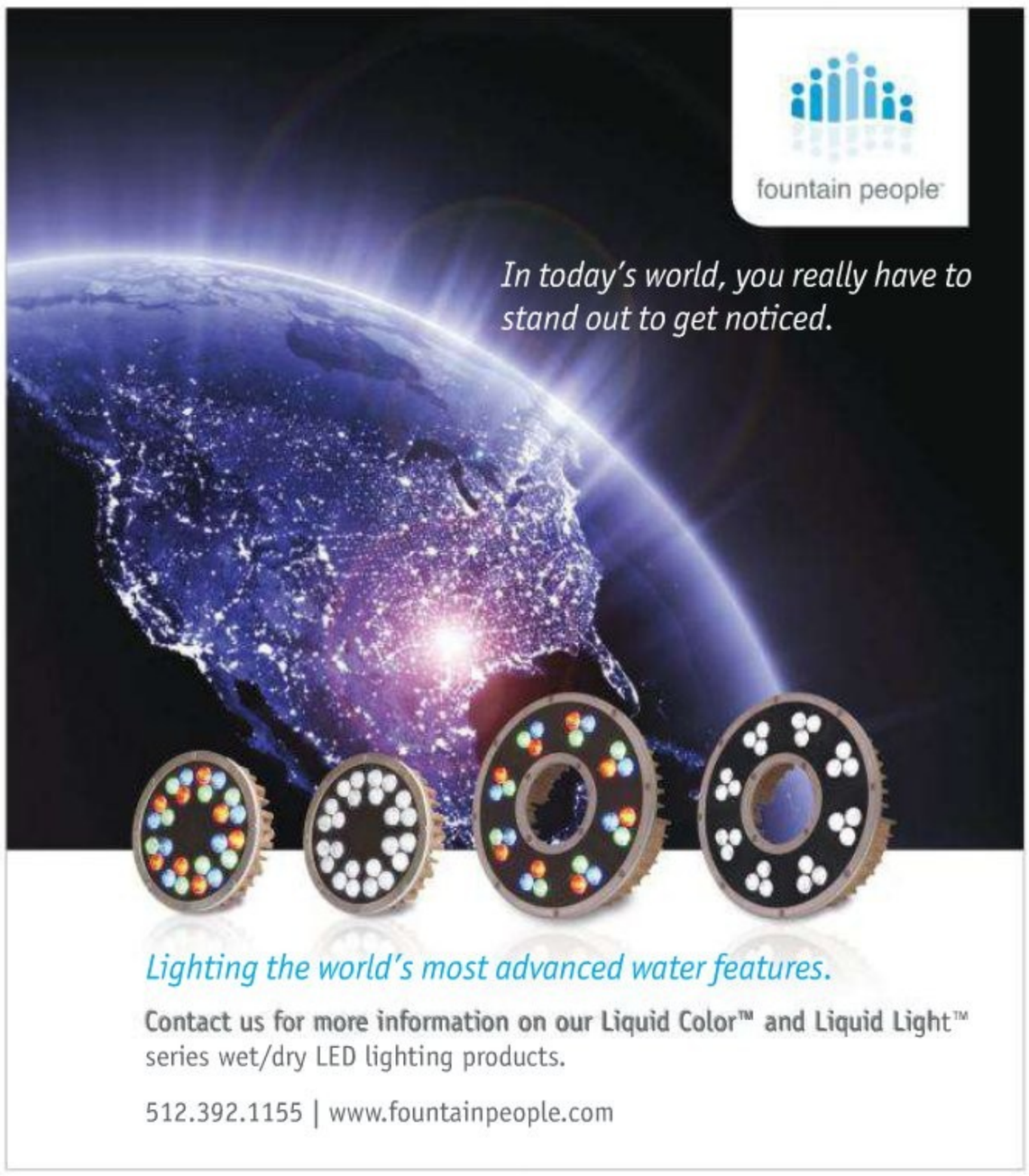
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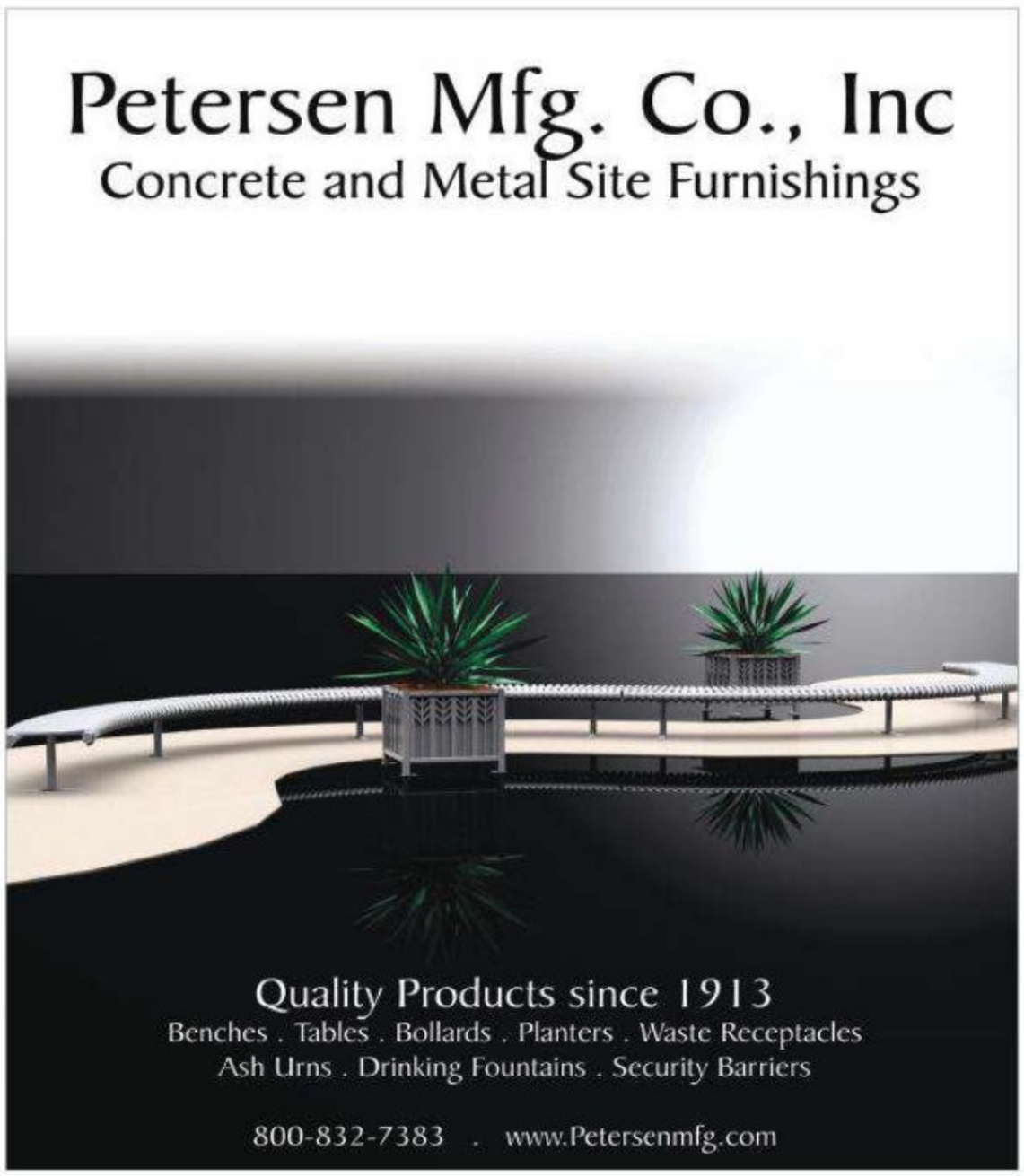
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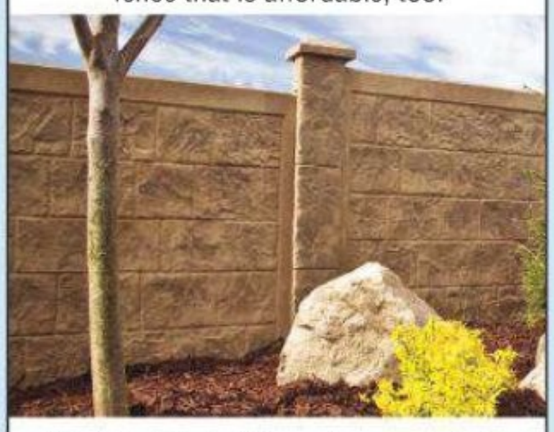
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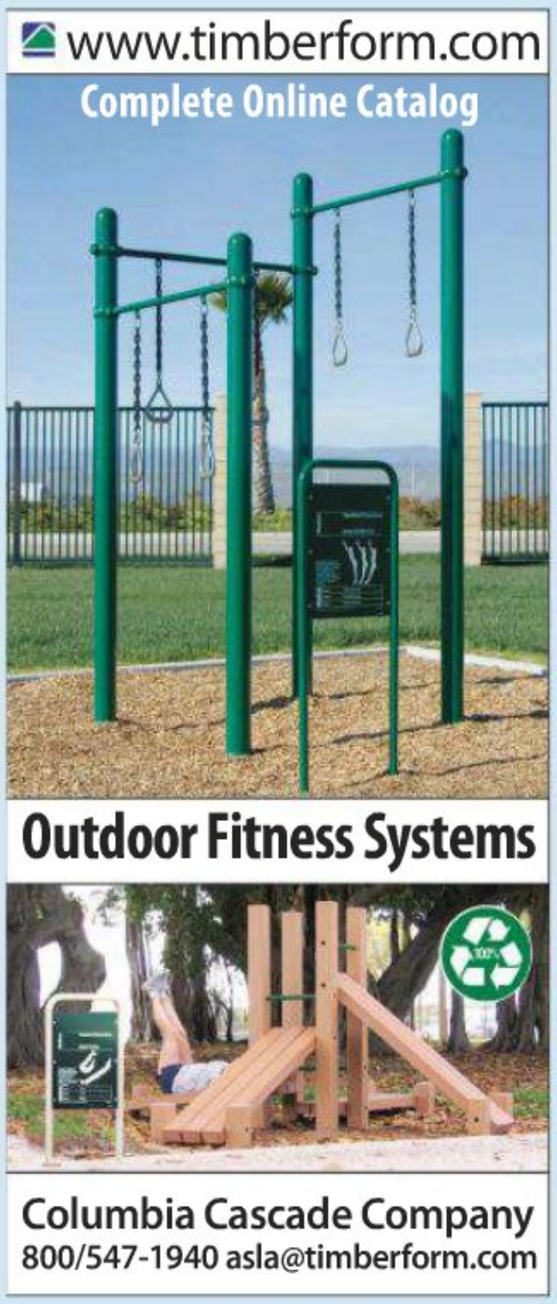
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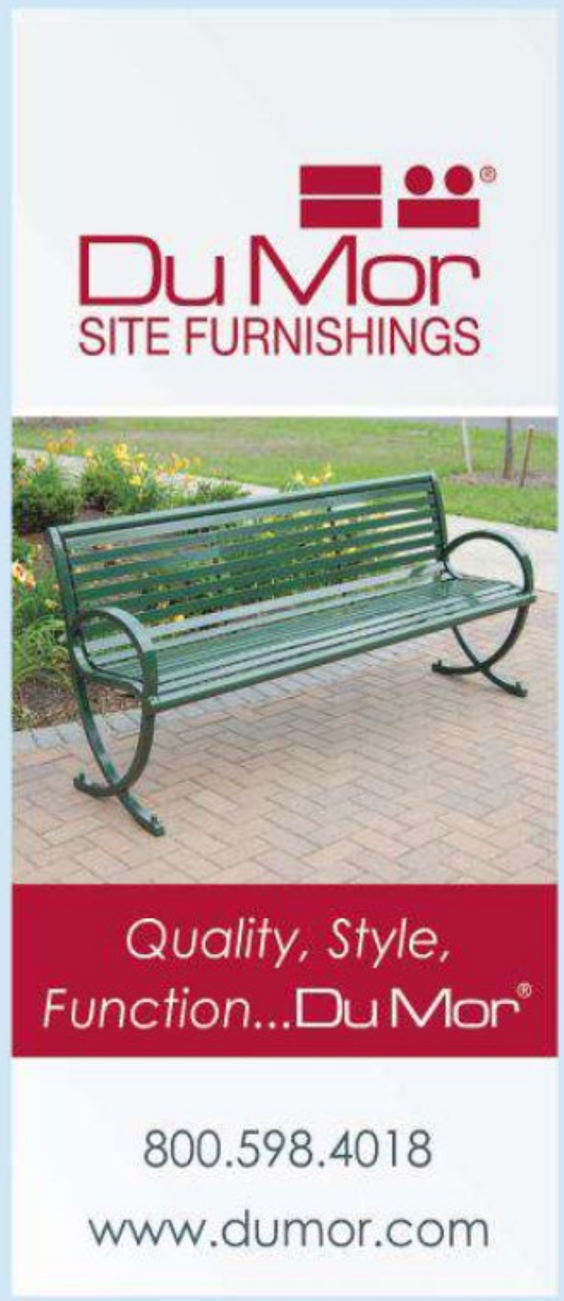
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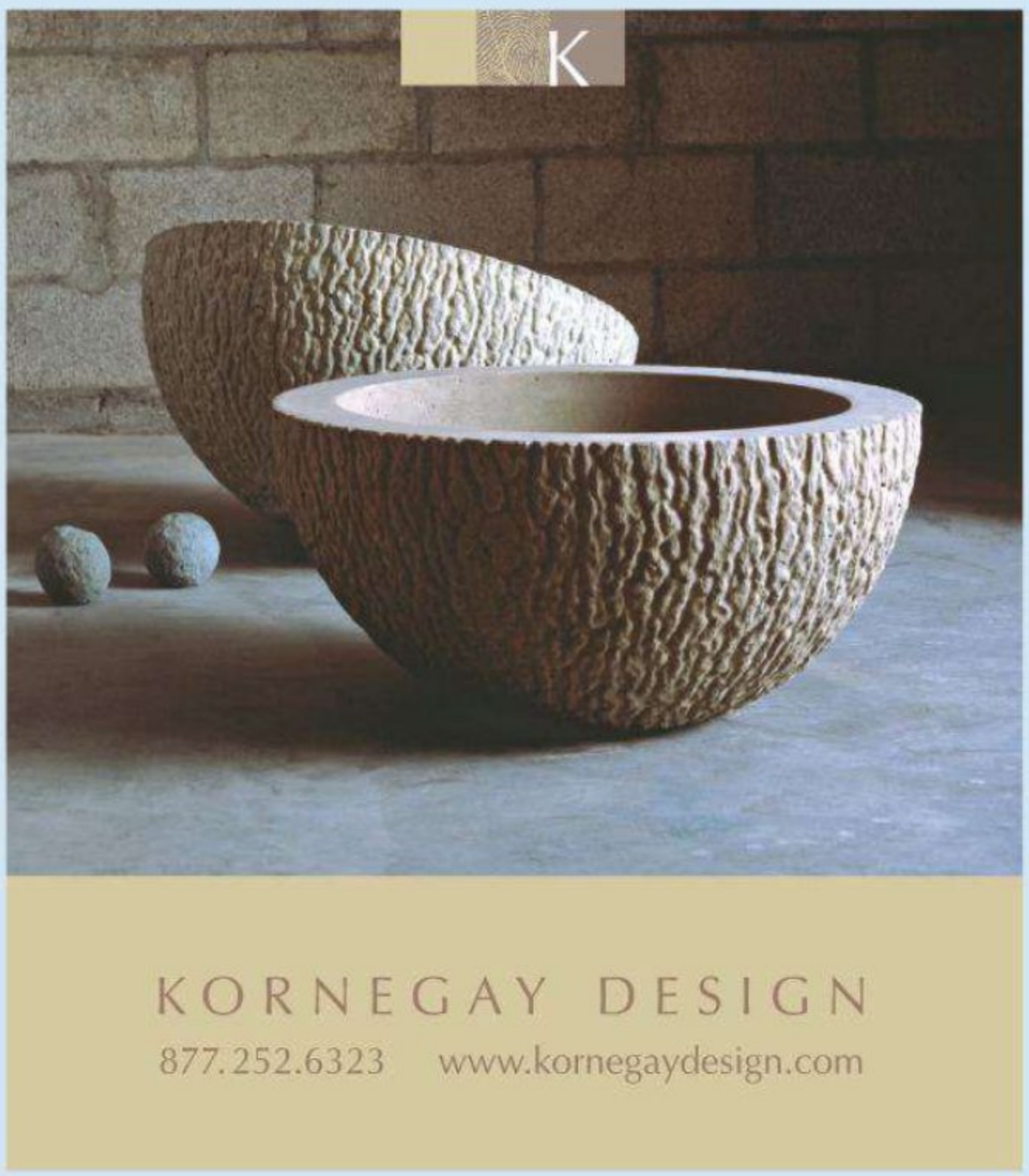
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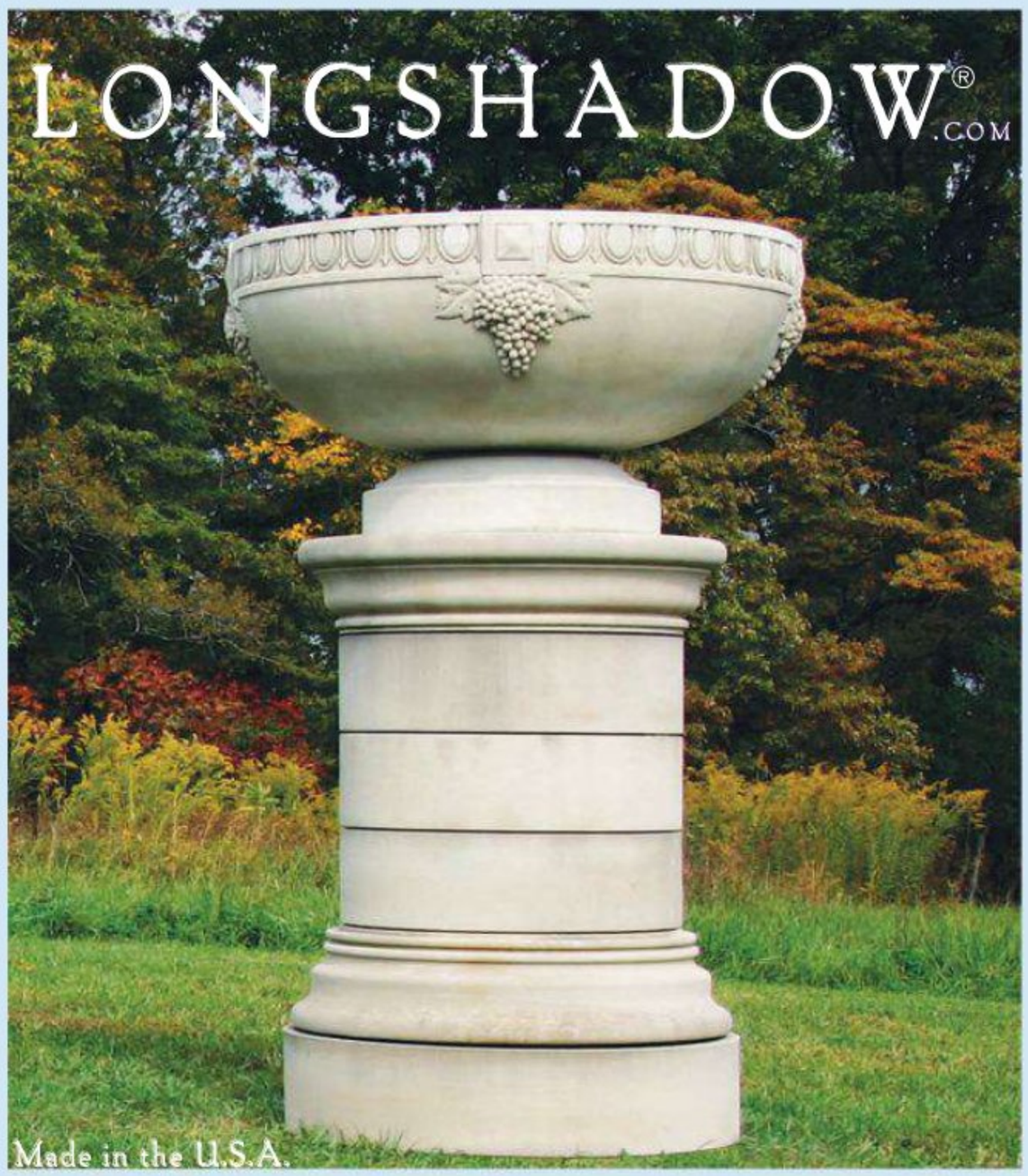
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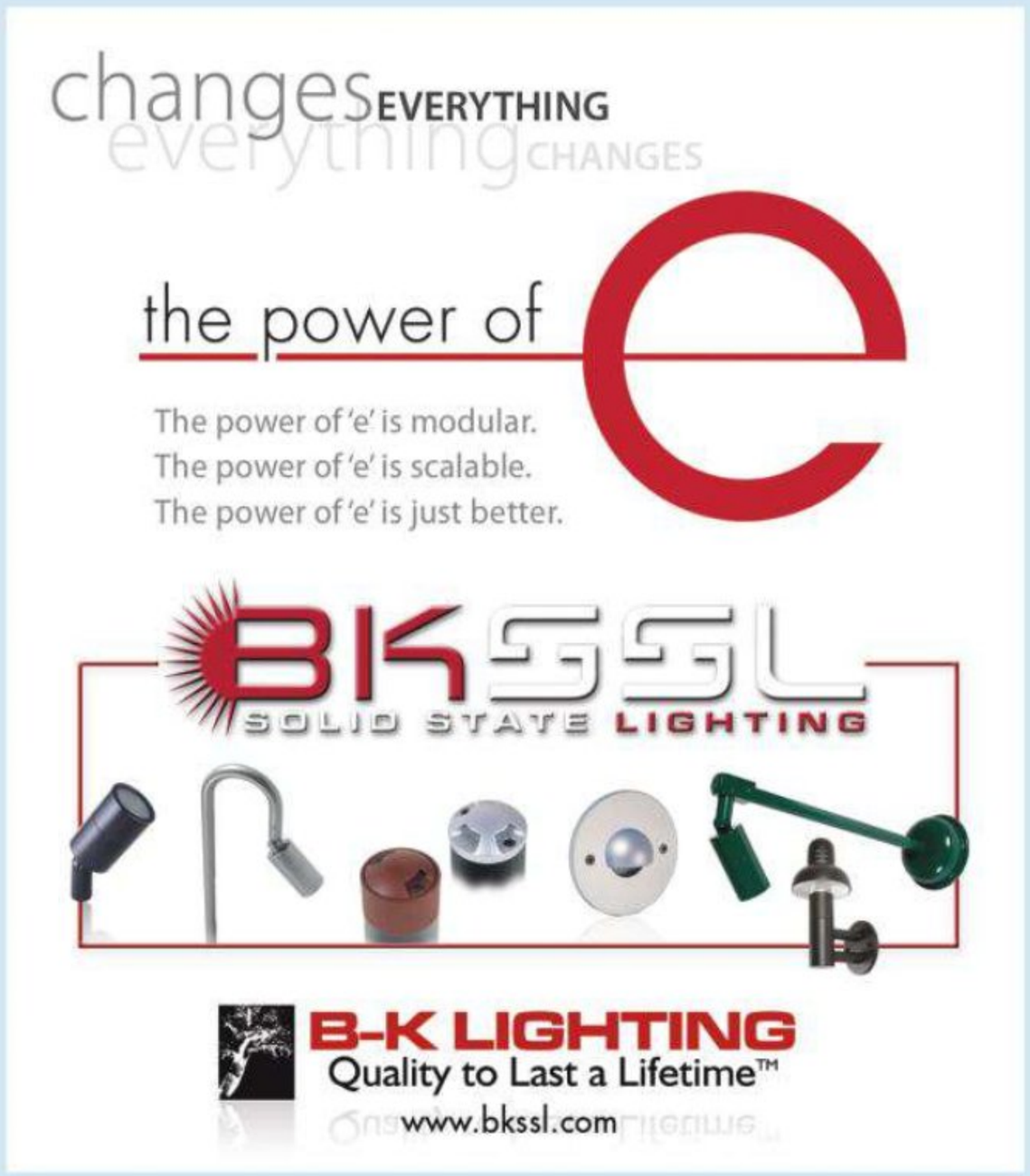
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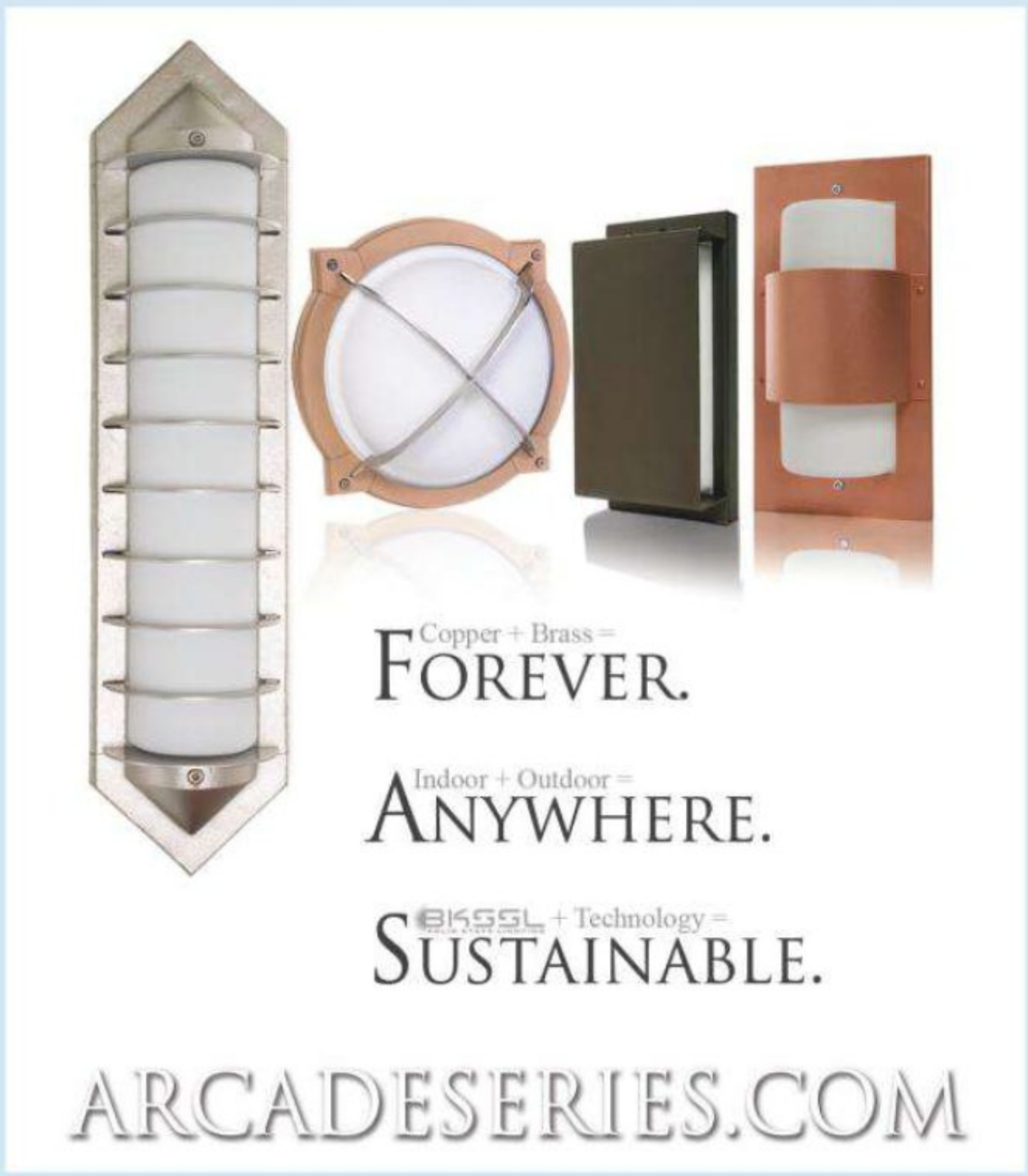
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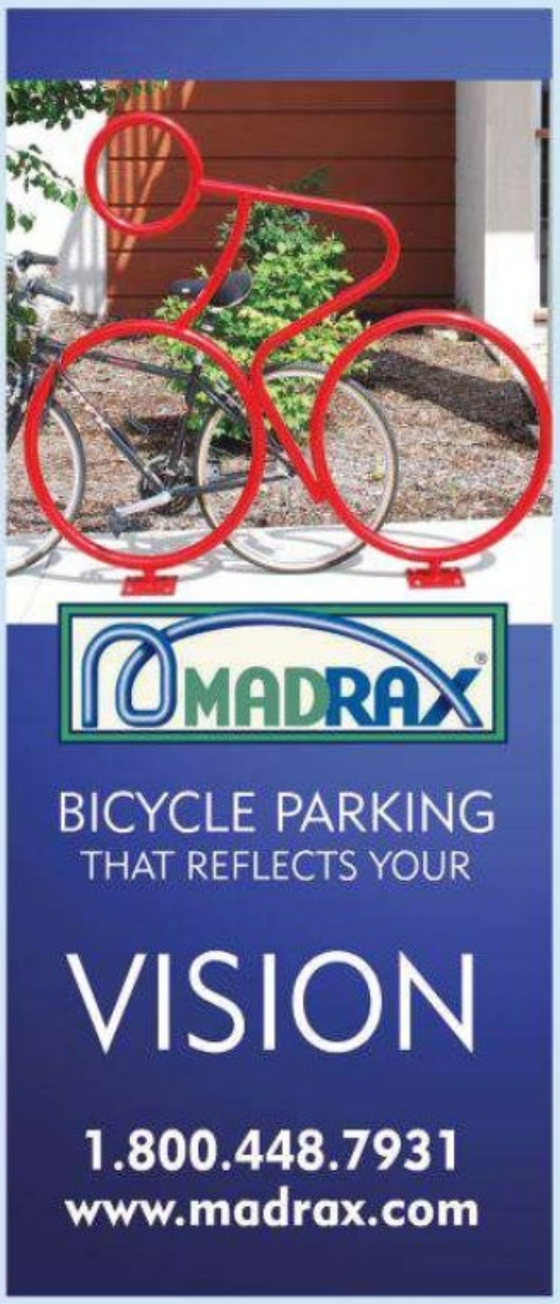


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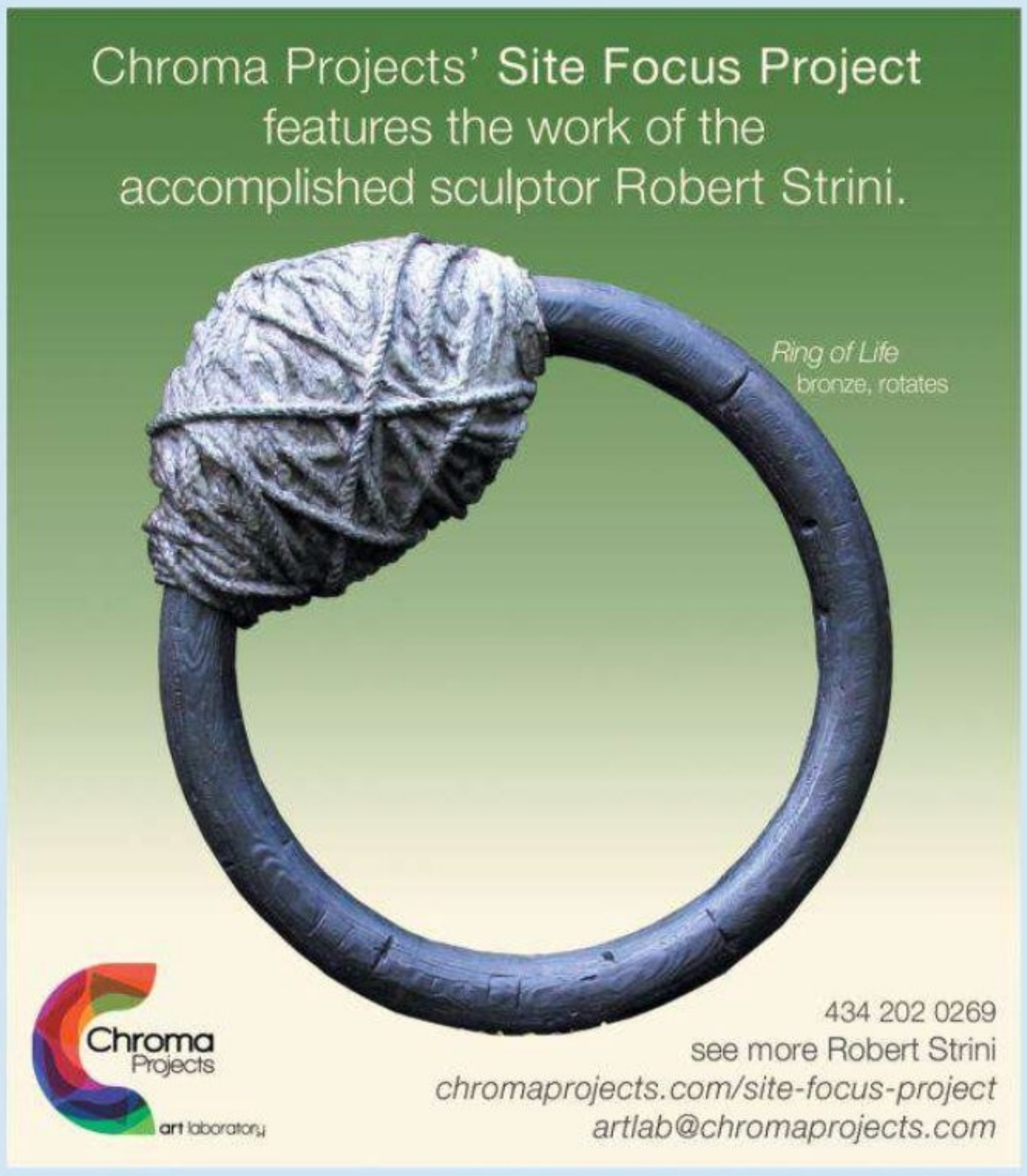
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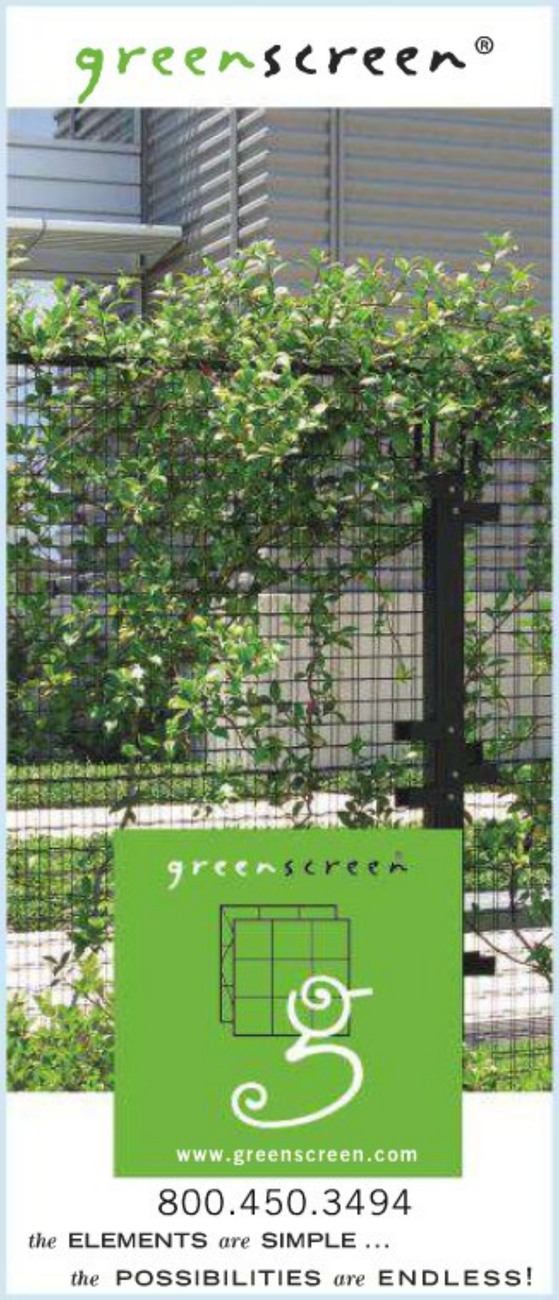
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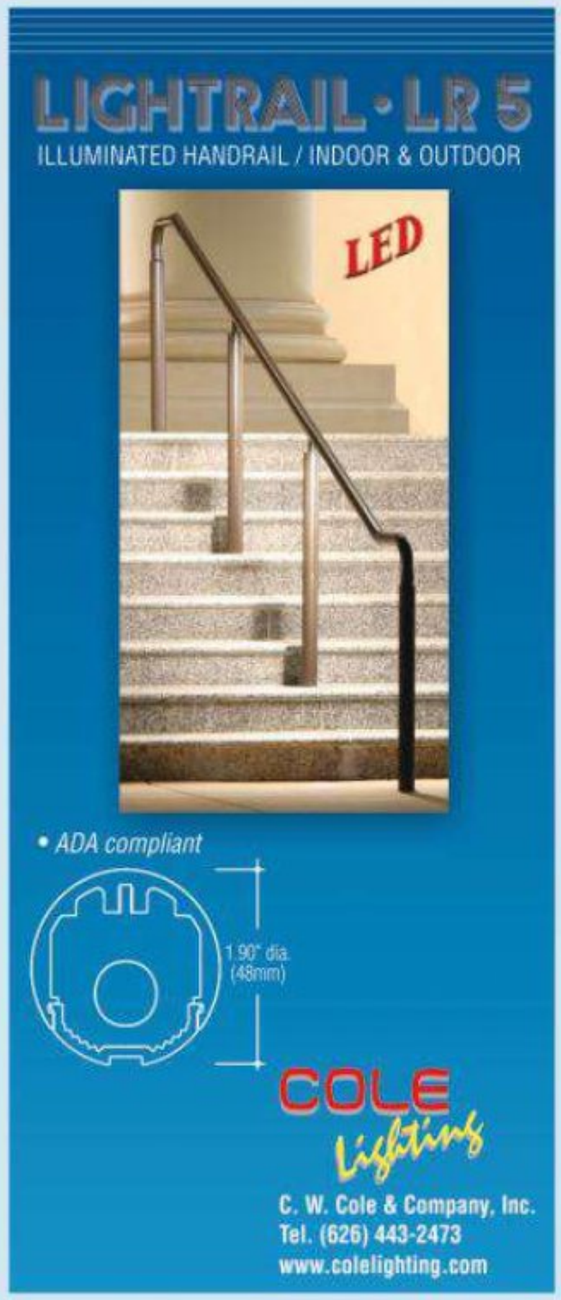
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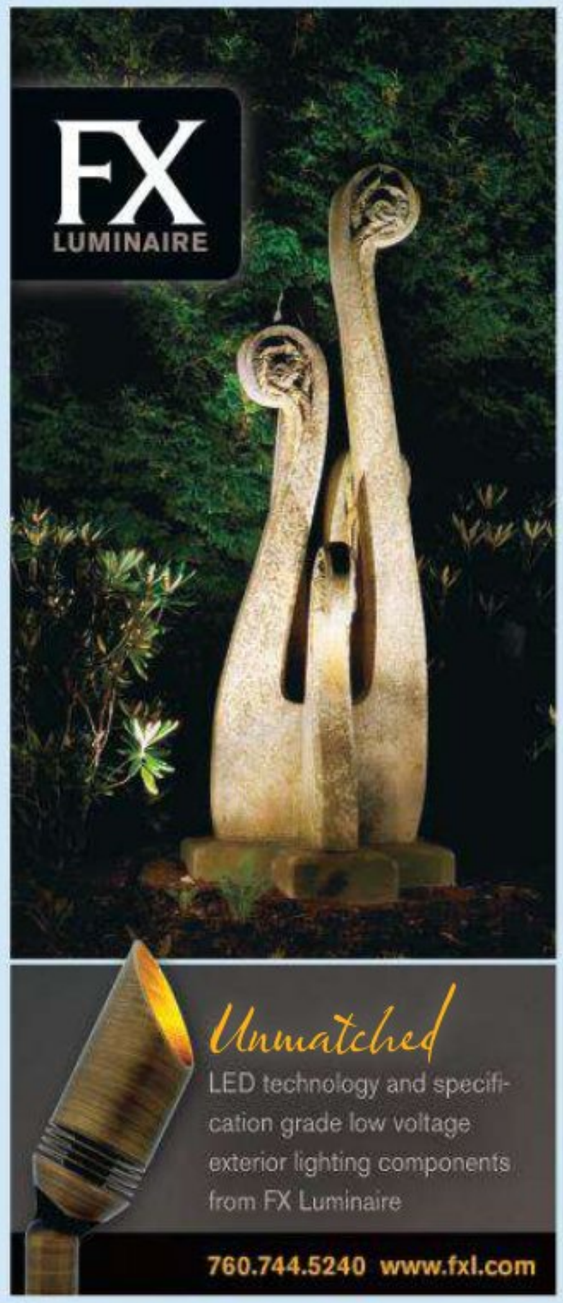
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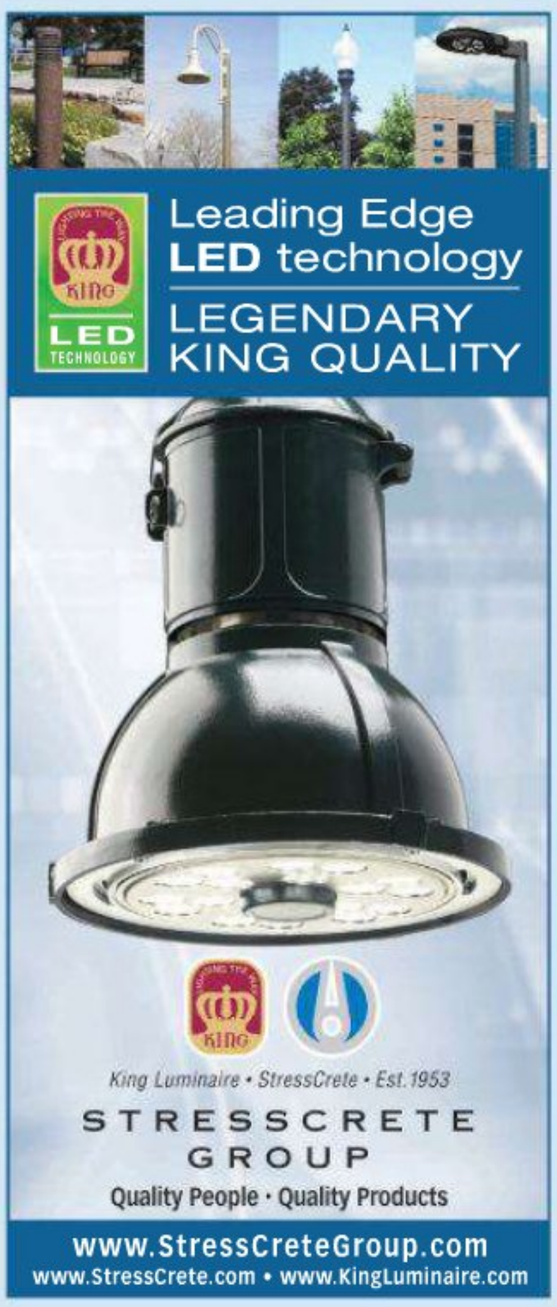
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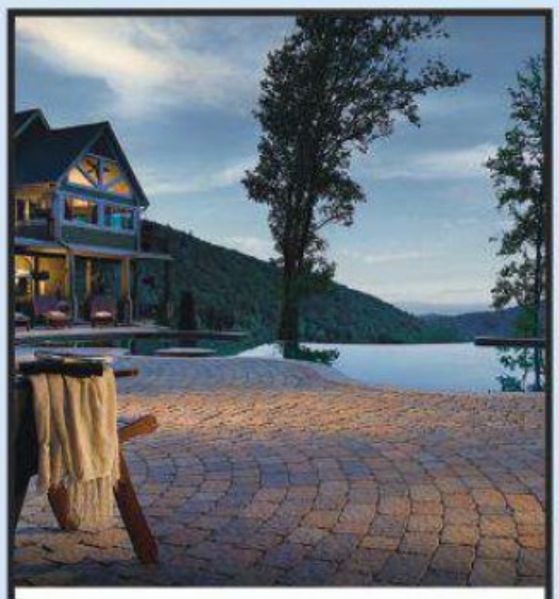
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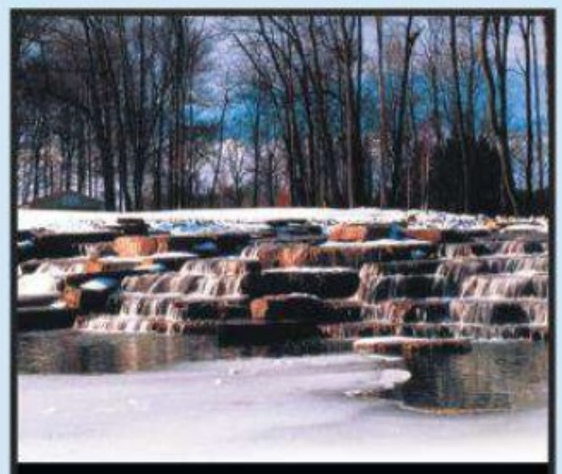
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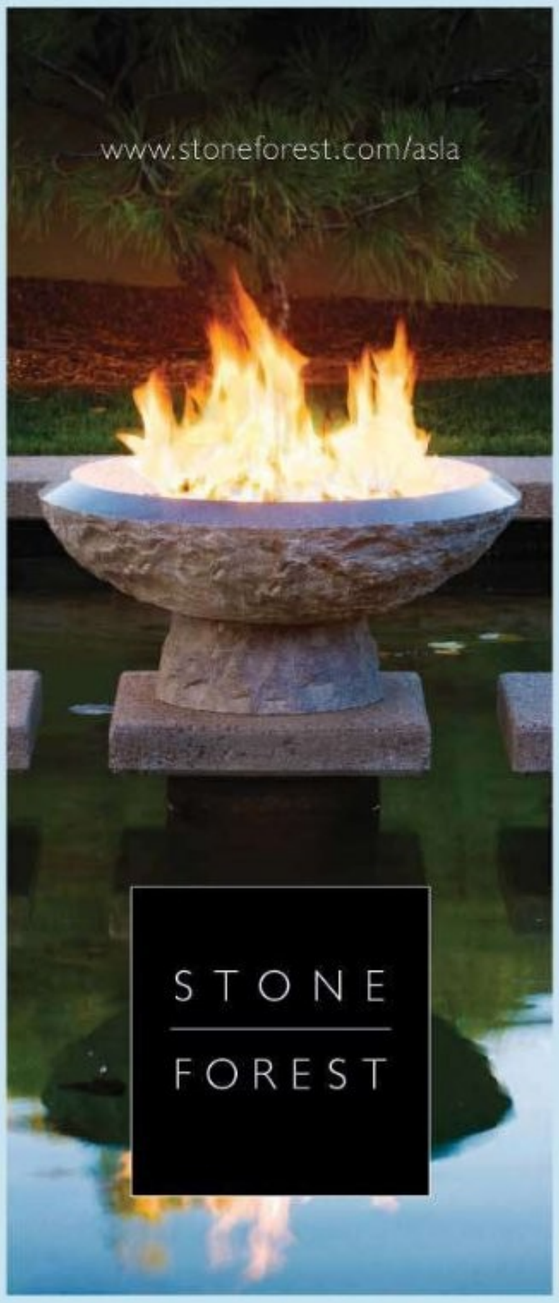


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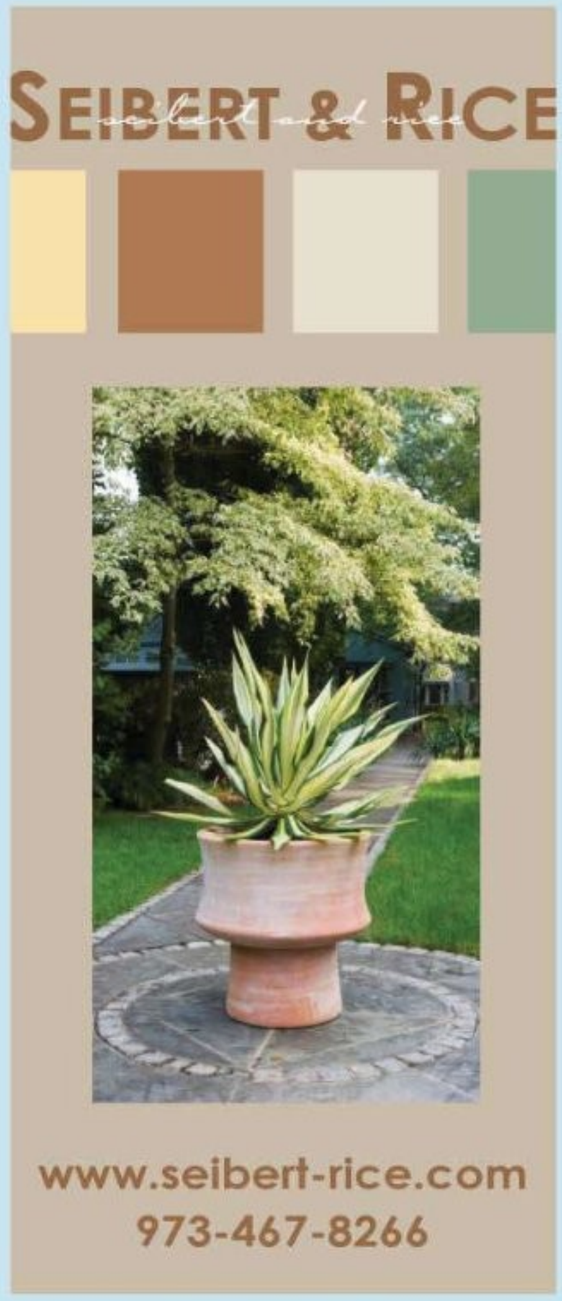
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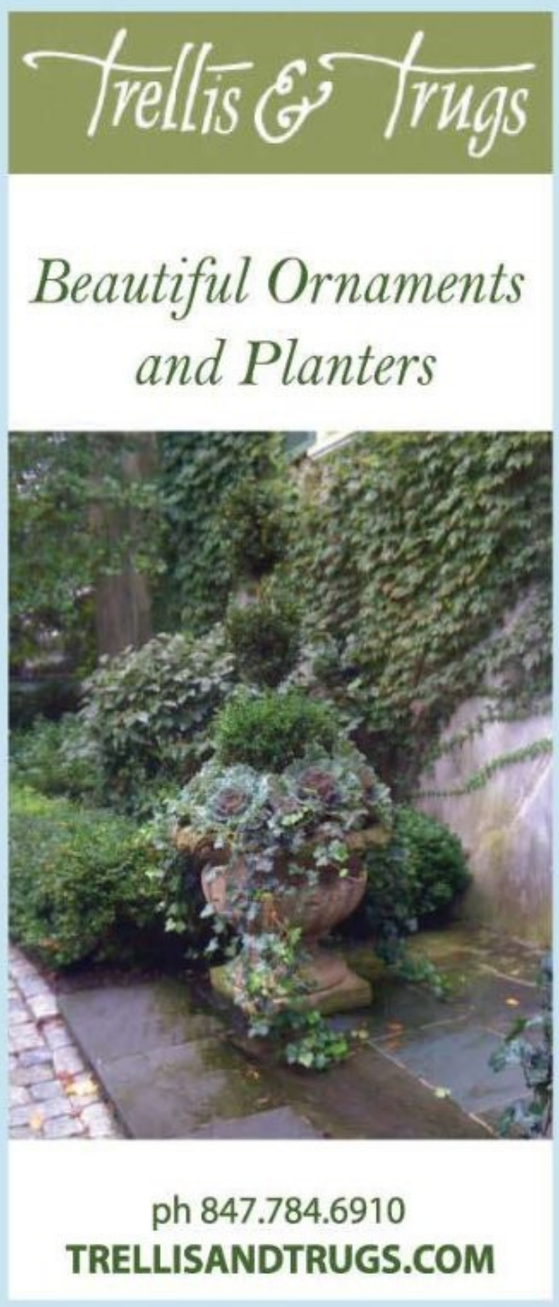
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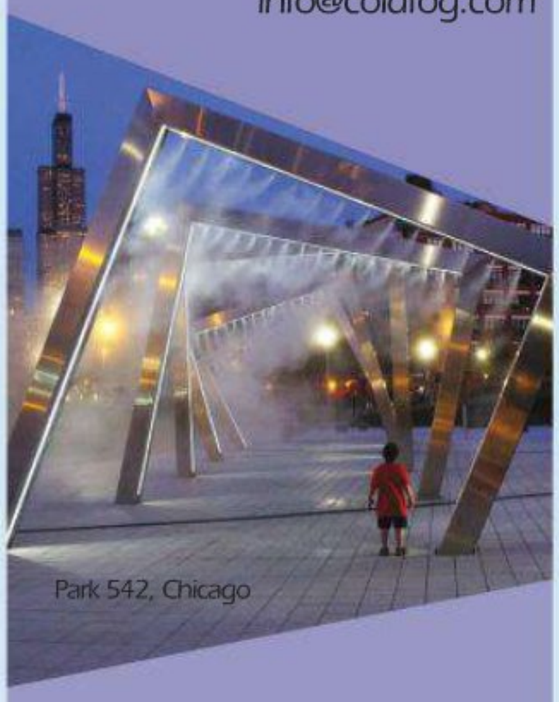


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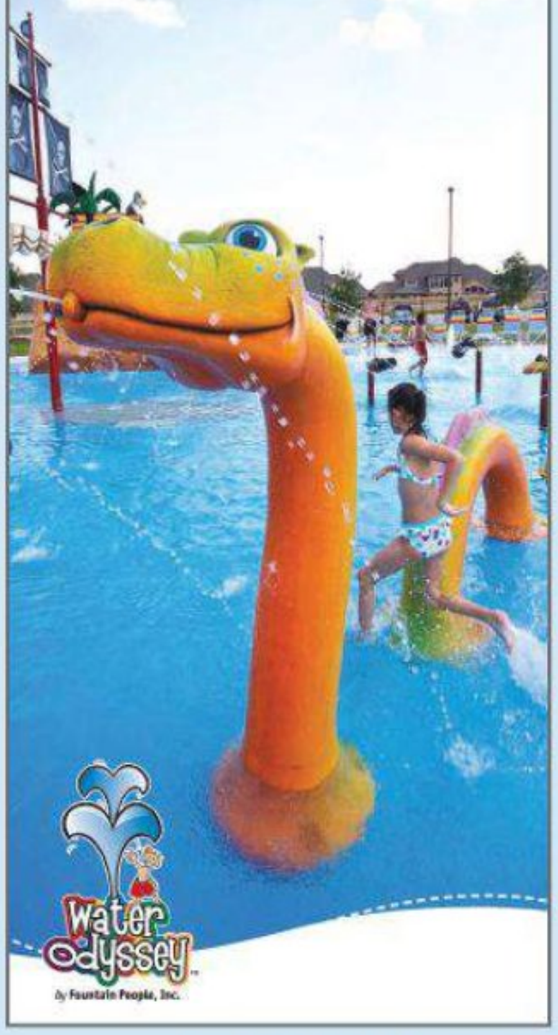
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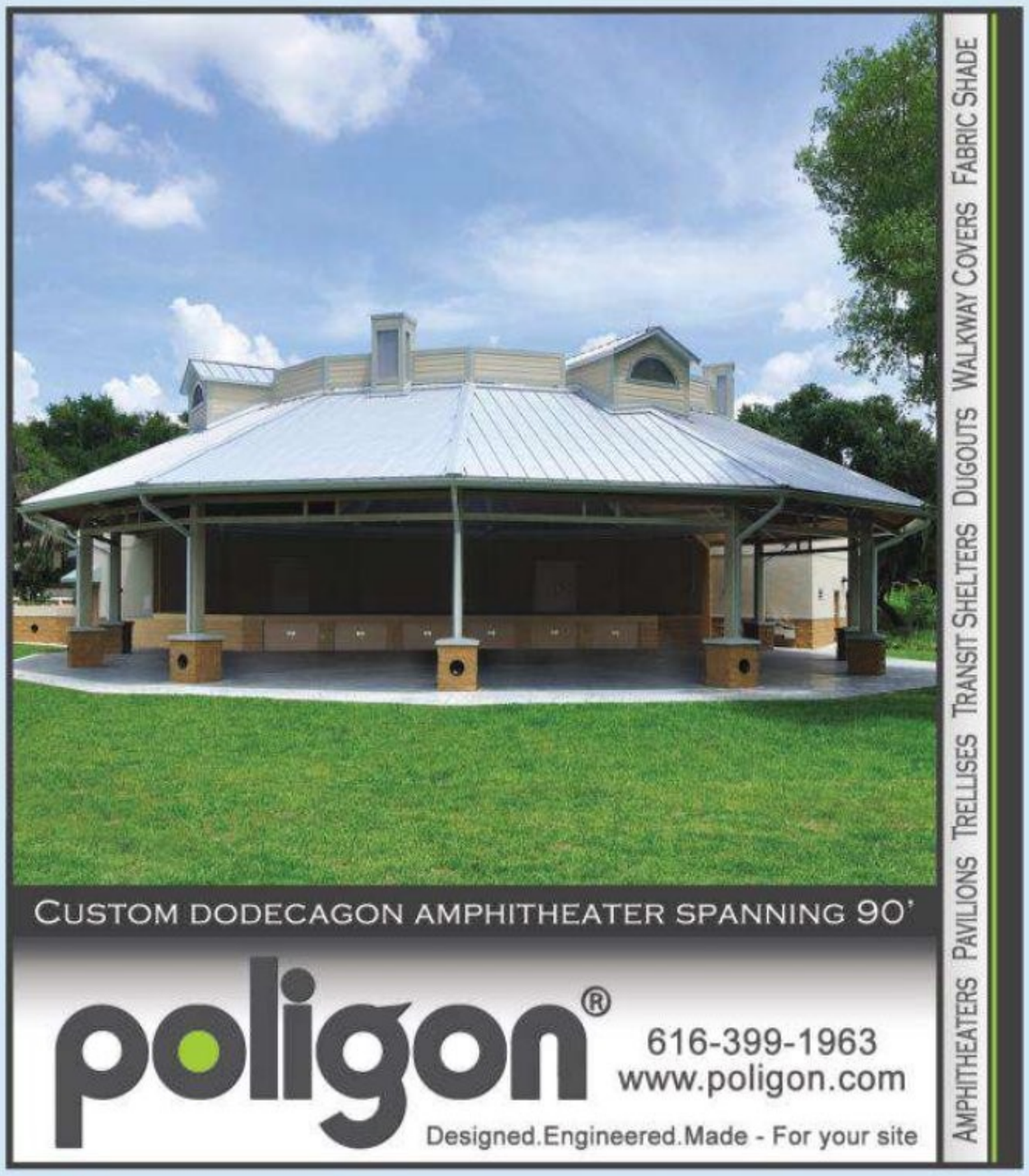
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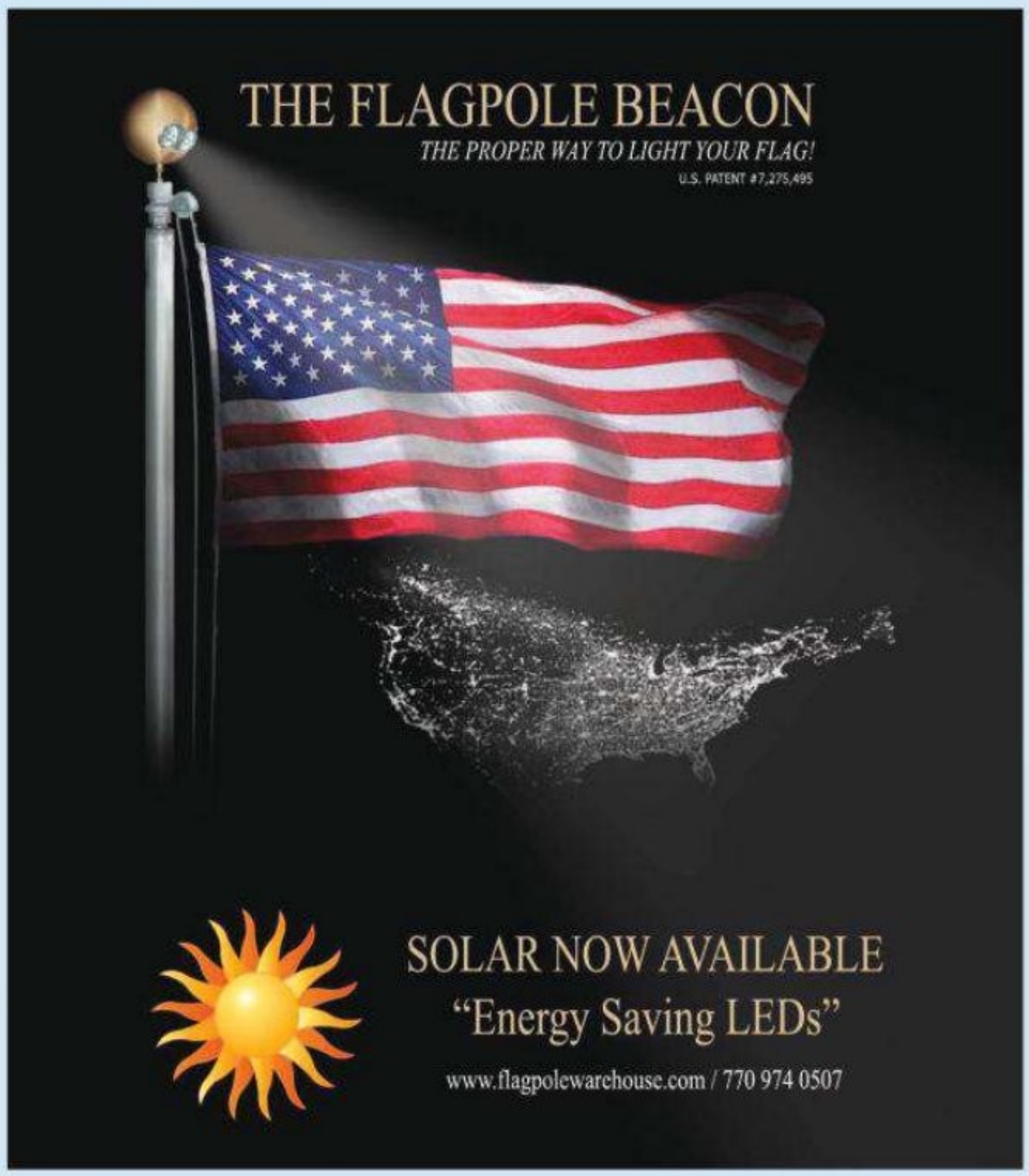
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Nominate or learn more by visiting **www.tclf.org/landslide** Deadline: May 31, 2012

Glendora Bougainvillea, CA. Photo @ Jodean Bifoss (as included in previous Landslide, Heroes of Horticulture)

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A GREENER GOVERNMENT

BY BUCK ABBEY, ASLA

In October of 2009, President Obama issued an executive order. "In order to create a clean energy economy that will increase our nation's prosperity, promote energy security, protect the interests of taxpayers, and safeguard the health of our environment," Obama wrote, "the federal government must lead by example."

Obama is not the first president to tackle sustainable design. President Clinton really got the ball rolling in 1999 with an order requiring the Department of Defense and the General Services Administration to develop sustainable design principles for federal buildings and land in consultation with the Department of Energy and the Environmental Protection Agency (EPA). Federal agencies were directed to apply these principles to the siting, design, and construction of new facilities. *Greening Federal Facilities,* 2nd edition, still an essential reference for anyone working with the government, was published in 2001, shortly after Clinton left office *(www.nrel.gov/docs/fy01osti/29267.pdf)*.

President George W. Bush's administration released a memorandum in January 2006 requiring all new federal buildings to meet LEED New Construction's standard. The following year, Bush signed the Energy Independence and Security Act (EISA) of 2007, which has changed the way the federal government addresses on-site stormwater management. Under section 438 of that law, federal facilities such as the mammoth 218-square-mile Fort Polk military base in Louisiana are required to maintain the hydrologic functions of a site and mitigate the adverse impacts of stormwater using low-impact development techniques for all new construction involving more than 5,000 square feet.

The Obama administration has continued to move the line forward, particularly when it comes to sustainable landscapes. Obama's executive order 13154 further articulated EISA Section 438 by requiring the EPA to produce *Stormwater Guidance for Federal Facilities*. (This seminal document on stormwater design is available online at *www.epa.gov/owow/NPS/lid/section438/pdf/final_sec438_eisa.pdf.)* It encourages federal agencies to use "next-generation stormwater practices" such as cisterns, pervious surfaces, vegetative swales, rain gardens, bioretention, and green roofs. Obama's order also established the Steering Committee on Federal Sustainability, which is composed of powerful upper-level agency personnel who will transform the way the government responds to sustainability.

As a direct response to President Obama's order, Nancy Sutley, the chair of the president's Council on Environmental Quality, requested that the United States Botanic Garden coordinate a working group to prepare recommendations for making federal landscapes more sustainable. It may seem strange to some that the U.S. Botanic Garden was assigned this task, but since 2006, the U.S. Botanic Garden has been a partner in the Sustainable Sites Initiative (SITES), creating a certification system that will recognize sustainable landscape design, construction, and maintenance. (The Lady Bird Johnson Wildflower Center at the University of Texas at Austin and ASLA, which publishes this magazine, are the other partners in SITES.)

This past Halloween, we finally got to see the fruits of those labors when the Council on Environmental Quality issued *Guidance for Federal Agencies on Sustainable Practices for Designed Landscapes* in conjunction with the annual GreenGov Symposium. (The document can be downloaded at *www.whitehouse.gov/administration/eop/ceq/sustainability/landscaping-guidance.)* At the meeting, Ray Mims of the U.S. Botanic Garden discussed the document and explained some of the ideas set forth. Much of the document closely mirrors SITES. Executive order 13154 mandates the use of the recently released "guidance" document now. All agencies will be informed that all landscape projects on federal land must be designed following sustainability standards for site selection, soils, water, vegetation, materials selection, human health, construction, and operations.

This is an incredible step forward for the SITES program and the profession. Sustainable design is a trend that has achieved great momentum and promises not to slow down anytime in the near future. Landscape architects must speak the words, do the actions, and follow design guidelines created by the SITES program to maintain our historic leadership in greening the country. ●

BUCK ABBEY, ASLA, IS A LANDSCAPE ARCHITECTURE PROFESSOR AT LOUISIANA STATE UNIVERSITY WHOSE RESEARCH FOCUSES ON LANDSCAPE CODES, TREE ORDINANCES, AND GREEN REGULATIONS.

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